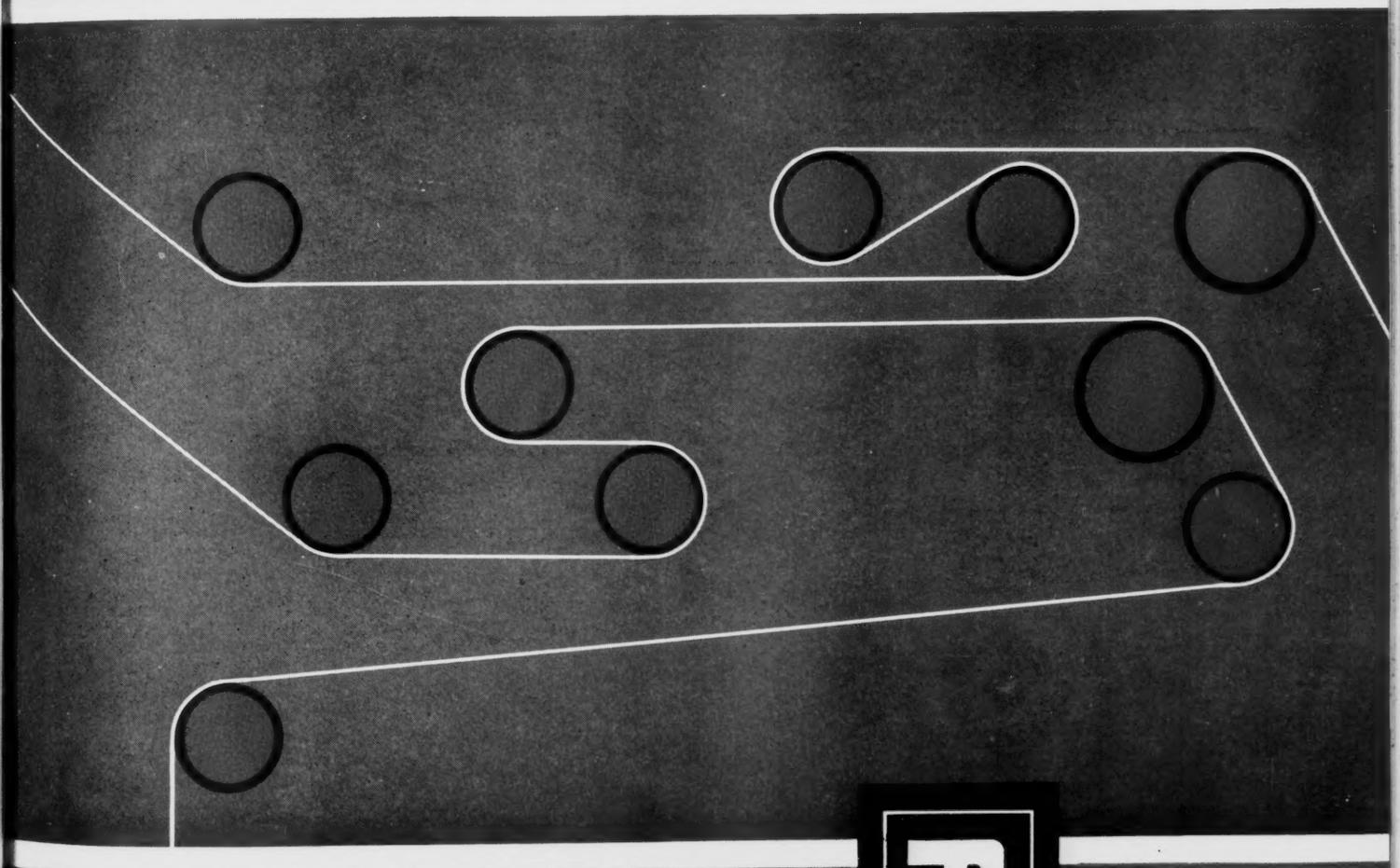
PRINTING EQUIPMENT *Engineer*



APRIL 1949

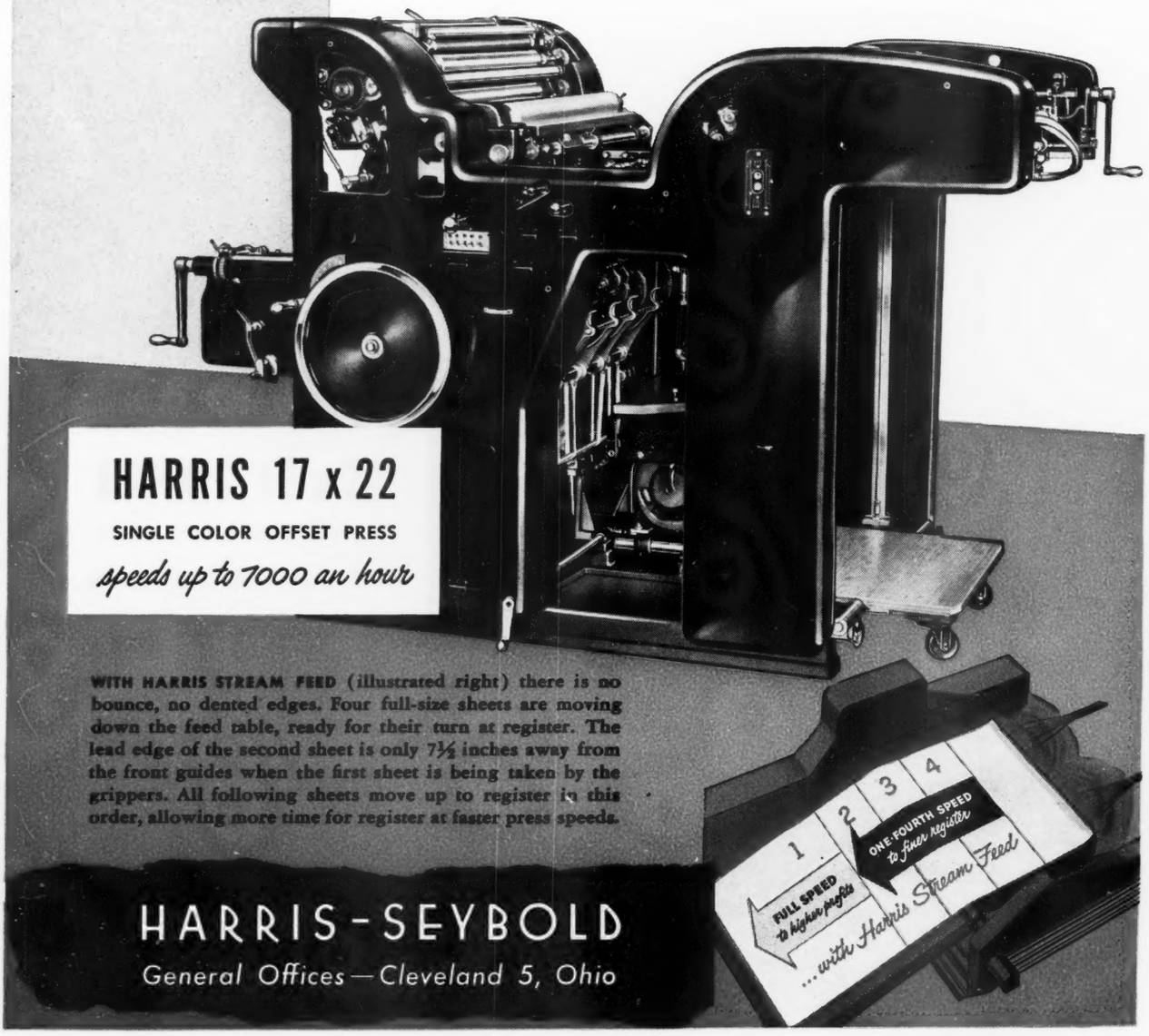
when you
"GO OFFSET"

. . . Talk with a man who owns a HARRIS 17 x 22 offset press

WHEN YOU START to think about going offset . . . as you may be right now . . . do yourself a favor . . . talk to a friend who owns a Harris 17 x 22″ offset press.

He will tell you why more printers, in combination shops and straight offset shops, are buying Harris presses than any other make. He will tell you it's because of Harris STREAM FEED that makes for finer register. He will tell you it's because the Harris press has MORE ROLLERS, which makes for smoother inking. He will tell you it's because of other Harris features such as single-point press control, automatic four-way protection, receding pile delivery and many others. They are features that mean easier operation, better quality work, more impressions per hour . . . all of which adds up to greater printing profits.

Get *a better run for your money.* Ask the man who *knows*...a Harris owner. WHEN YOU GO OFFSET, you'll GO HARRIS, too!

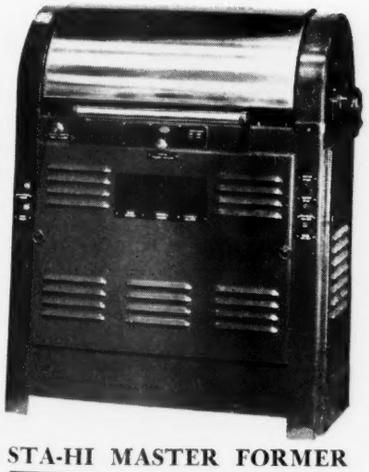


WITH HARRIS STREAM FEED (illustrated right) there is no bounce, no dented edges. Four full-size sheets are moving down the feed table, ready for their turn at register. The lead edge of the second sheet is only 7½ inches away from the front guides when the first sheet is being taken by the grippers. All following sheets move up to register in this order, allowing more time for register at faster press speeds.

HARRIS-SEYBOLD

General Offices—Cleveland 5, Ohio

IT'S PERFORMANCE THAT COUNTS . . .



STA-HI MASTER FORMER

One of the most important steps in stereotype routine is the proper processing of the dry mat after it is molded and before it is cast.

The Sta-Hi Master Former does that processing perfectly – electrically baking the mat, shrinking it and vacuum-forming it to produce better plates.

Proof of performance? Just read the "quotes" below, taken from the scores of letters we have on file from satisfied Master Former users:

- The dry mats turned out have *uniform casting levels* impossible to get with the equipment formerly used.
- We are able to *control shrinkage* at all times.
- We have been practically *free from chilled plates* ever since we installed it.
- It certainly has *sharpened up the appearance of the type and solids.*

A Sta-Hi Master Former can give you these same desirable results in your plant. Ask us for complete details.

STA-HI

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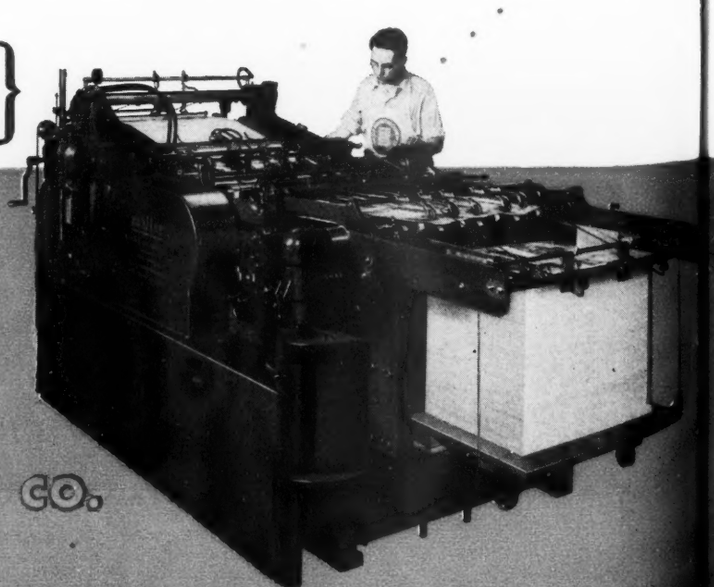
Another

by miller

Another new press introduced — within six months of its two-color companion already a thoroughly established success throughout the country. The SW is the sixth press in the growing family of Miller presses — all, except one, brand new in the last twelve years. and every one without exception virtually identical in adjustment, operation, and efficiency. A Miller pressman is truly a Miller pressman on any Miller press.

This new press is now available for immediate order and for prompt delivery.

The new Miller 21 x 28 SW is a fitting companion machine to the unique Miller 21 x 28 TW two-color press— both are compact—fast—easy to operate.

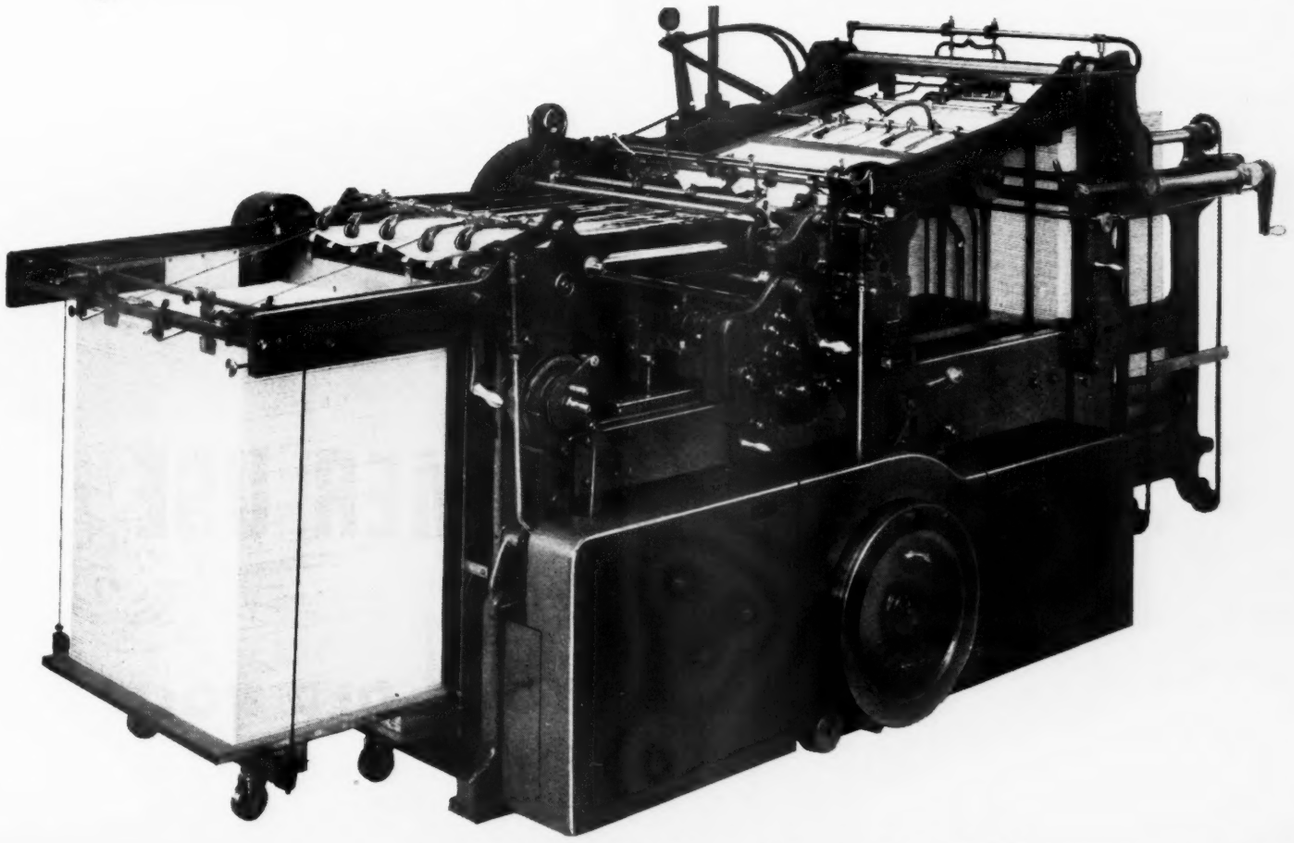


Other Miller Presses:
20 x 26 Simplex, 27 x 41 TY, 27 x 41 SY and 28 x 41 CY

miller

MILLER PRINTING MACHINERY CO.

r New Press



The Miller 21 x 28 SW SINGLE COLOR

Specifications

Bed size	24½″ x 29″
Maximum sheet	21″ x 28″
Minimum sheet	8½″ x 11″
Maximum size form on bed	20¼″ x 28″
Maximum size form in chase	20¼″ x 26″
Stock handled	.0025″ to .015″ (Some stocks up to .026″)
Range of operating speeds	2750 to 5000

Roller Cores

	NO. REQUIRED	DIAM. OF COMPOSITION
Form	2	2½″
Distribution	3	2″
Fountain Ductor	1	2½″

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PRINTING EQUIPMENT *Engineer*

A TECHNICAL MAGAZINE

Volume 78 Number 1

Published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields.

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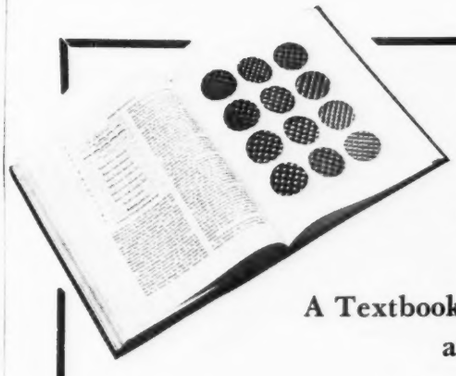

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A Textbook for Printing's Production and Mechanical Executives

By Louis Flader and J. S. Mertle

Many executives know little about photoengravings or how they are made. Many look upon photoengraving as a secret process. Many would like to comprehend the process fully. Every operation fully explained.

MODERN PHOTOENGRAVING is an up-to-the-minute textbook on photoengraving covering every practice of this important process.

Contents: Glossary defining 775 trade terms; 334 pages; 18 chapters, each dealing with a branch of photoengraving; 47 Tables of Data; 206 Chemical and Mathematical Formulas; 392 Illustrations; Tables of Weights and Measures and Conversions; Process Hygiene; 21 Pages of Index; Size, 8¾ in. by 11¼ in.; Dark Fabrikoid, Gold Stamped Cover.

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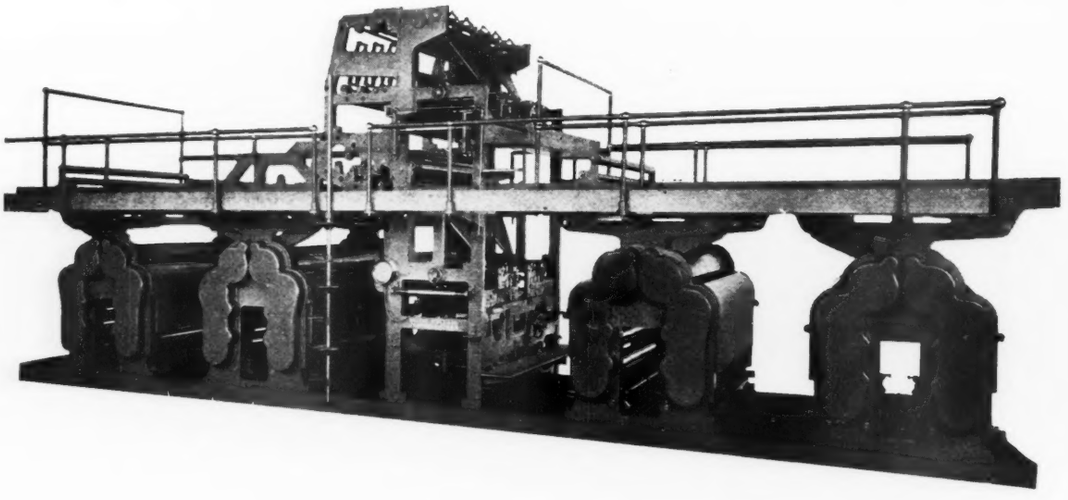

The design is clean cut, embodies modern engineering practice and conserves space. Publishers prefer alloy forged steel gears and especially a design which allows rapid inspection of all working parts. . . . Visit our plant and see presses in quantity production.

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It's just like throwing money away to run a quantity job singly or 2-up, when it could have been handled to better advantage 4-up, 8-up, 16-up or more. Avoid this waste by doing it the Ludlow way.

The Ludlow-set multiple form shown here was cast 21-up from a single setting of four lines of Ludlow typeface matrices by repeat-casting. Savings are at once apparent in makeup, lockup, positioning, press running time, and reduced handling time in both the pressroom and the bindery.

Then, too, such a job goes right to press without the expense of electrotyping, or delays due to waiting for plates. Delivery requirements can be met with satisfaction and profit to both plant and customer.

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It's spring! Time to make sure you have a supply of well-seasoned Rapid *summer* composition rollers on hand. Rapid rollers make a big difference in the efficiency of your press operations. They save make-ready time, assure maximum press production, and improve the appearance of every job you turn out. Order your Rapid summer composition rollers now — to make certain they're well-seasoned when you need them.

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This drawsheet is firm, durable, economical and long-lived.

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Available in your gauge and size with synthetic rubber coating.

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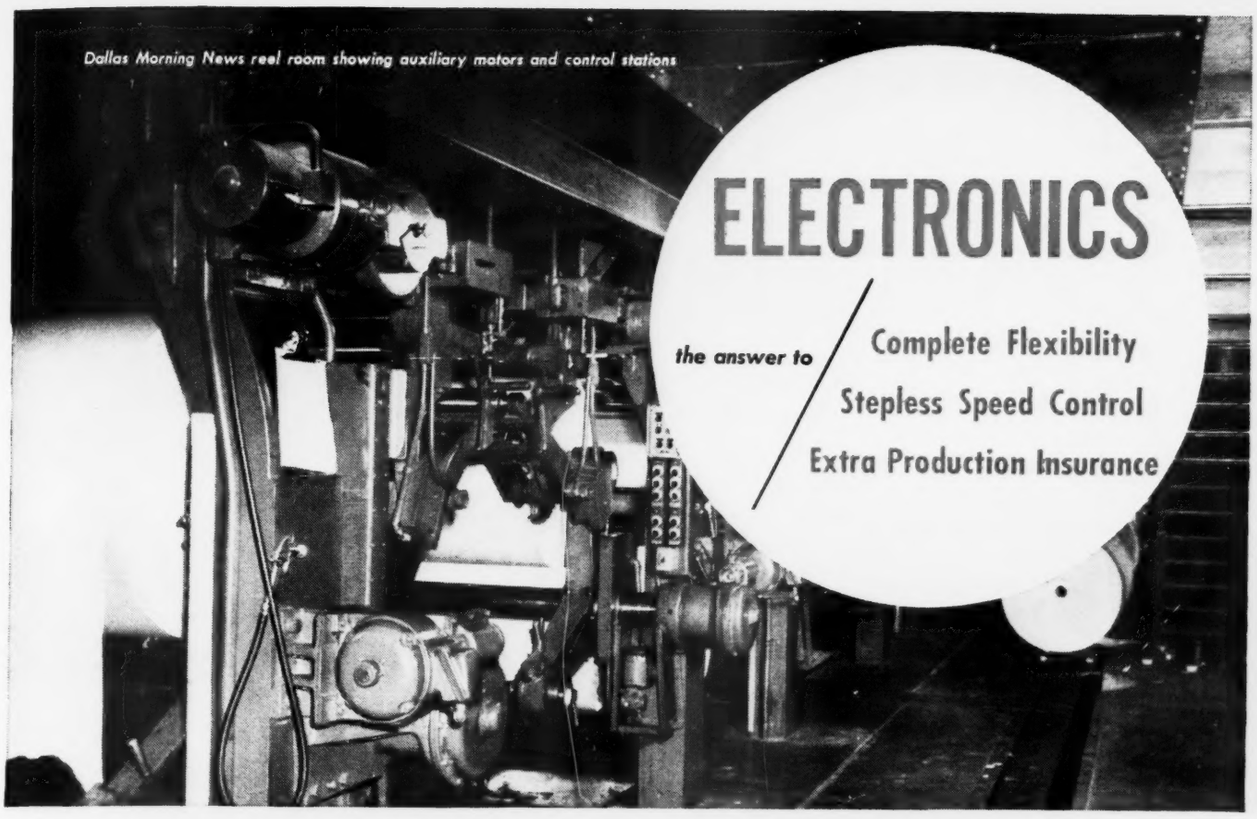
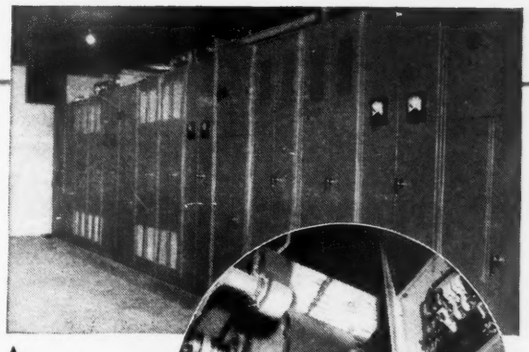


Dallas Morning News reel room showing auxiliary motors and control stations

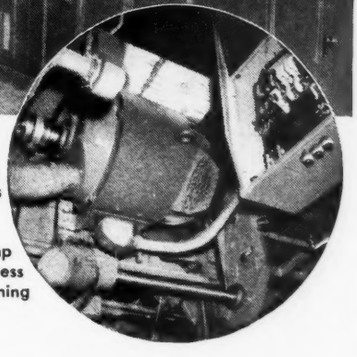
ELECTRONICS

the answer to

Complete Flexibility
Stepless Speed Control
Extra Production Insurance



G-E electronic press drive control at Dallas Morning News



One of twenty 40-hp motors driving new press line at Dallas Morning News

Here's what another well-known newspaper production man—Leven Deputy, Mechanical Superintendent, The Dallas Morning News—says about the General Electric electronic press drive, installed for the first time in the Southwest by the Dallas Morning News:

"We believe in the idea of complete flexibility of press combinations, stepless speed control, and inherent standby capacity for extra production insurance. Because we believe electronic press drive can answer these expectations, when we planned our new printing plant, we ordered General Electric electronic press drive equipment."

The magic of electronics, successful in hundreds of other applications, has now proved itself a worthy partner in the printing industry. Through the ignitron rectifier tube, incoming a-c power is converted to d-c power for accurate and complete press control. Power costs are slashed. The entire installation is compact; easy to operate, easy to maintain. Get the details now!

YOU CAN PUT YOUR CONFIDENCE IN GENERAL ELECTRIC

General Electric can co-ordinate all your electric equipment—from glue pots to press drives—to fit your individual requirements. Why not take advantage of experienced G-E application engineering. Just outline your needs to a G-E Printing Specialist in our nearest sales office and let him help you with your printing problems.

General Electric Company, Section 653-3
Apparatus Department, Schenectady 5, N. Y.

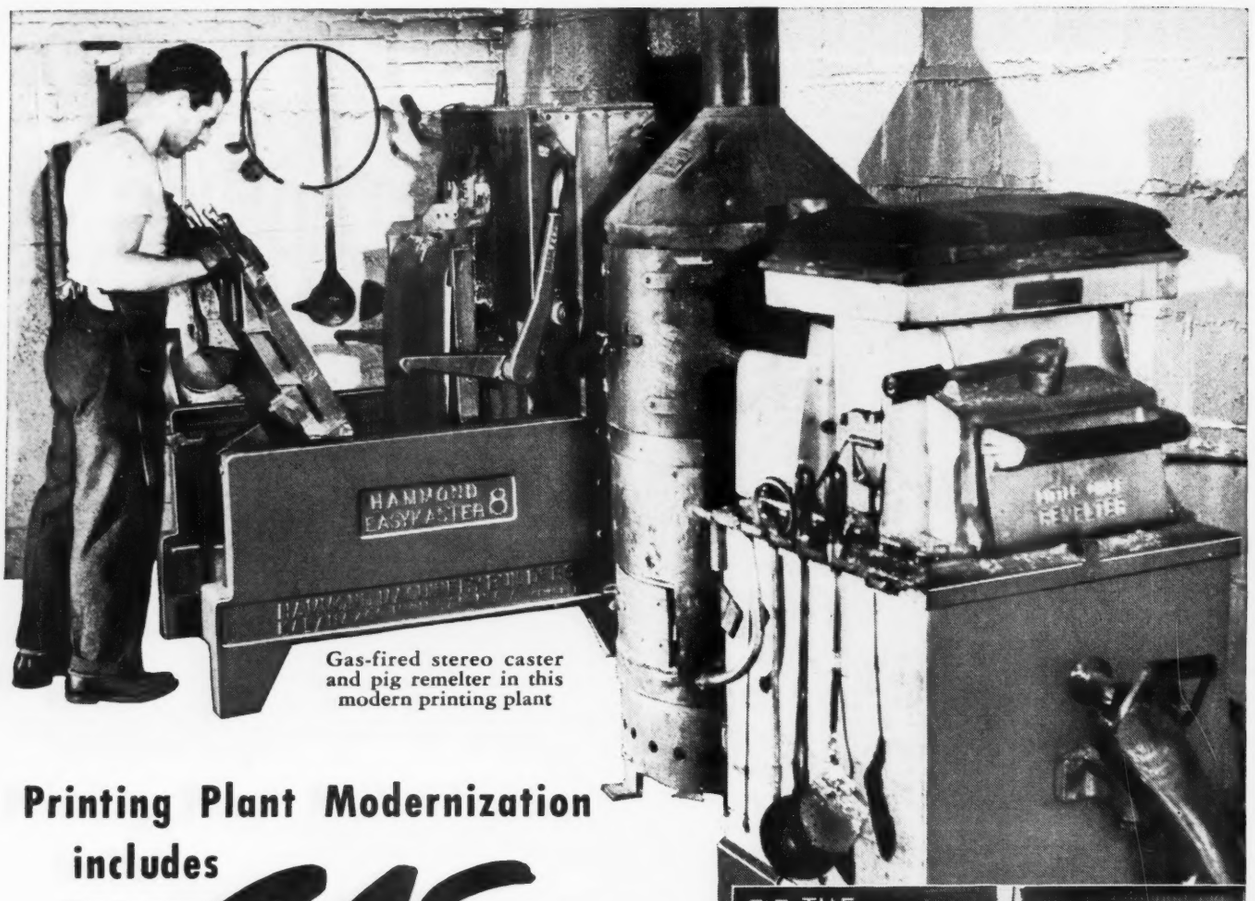
Please send me a copy of your bulletin GEA-4670 which describes the electronic press drives and control.

Name .....

Address ..... State .....

City .....

GENERAL ELECTRIC



Gas-fired stereo caster and pig remelter in this modern printing plant

Printing Plant Modernization includes EFFICIENT GAS EQUIPMENT

MODERNIZATION of the mechanical department was one of the important phases of the recent remodeling project at The Monessen Daily Independent. The streamlined-for-action shop of this progressive Monessen, Pennsylvania daily demonstrates the value of production-planning in newspaper publishing.

Of course, a large part of the mechanical burden in this plant is carried by the modern Gas Equipment, including:

Stereo Caster **Dross Furnace** **Material Maker**
Pig Remelter **Ludlow Typecaster**

In selecting their mechanical equipment, Messrs. Harry and William Pore were guided by previous experience, and the proved efficiency of Gas Equipment for graphic arts processes. The importance of their decision is reflected in the capacity of the plant which runs over 4,900 newspapers daily, while maintaining its substantial volume of commercial printing.

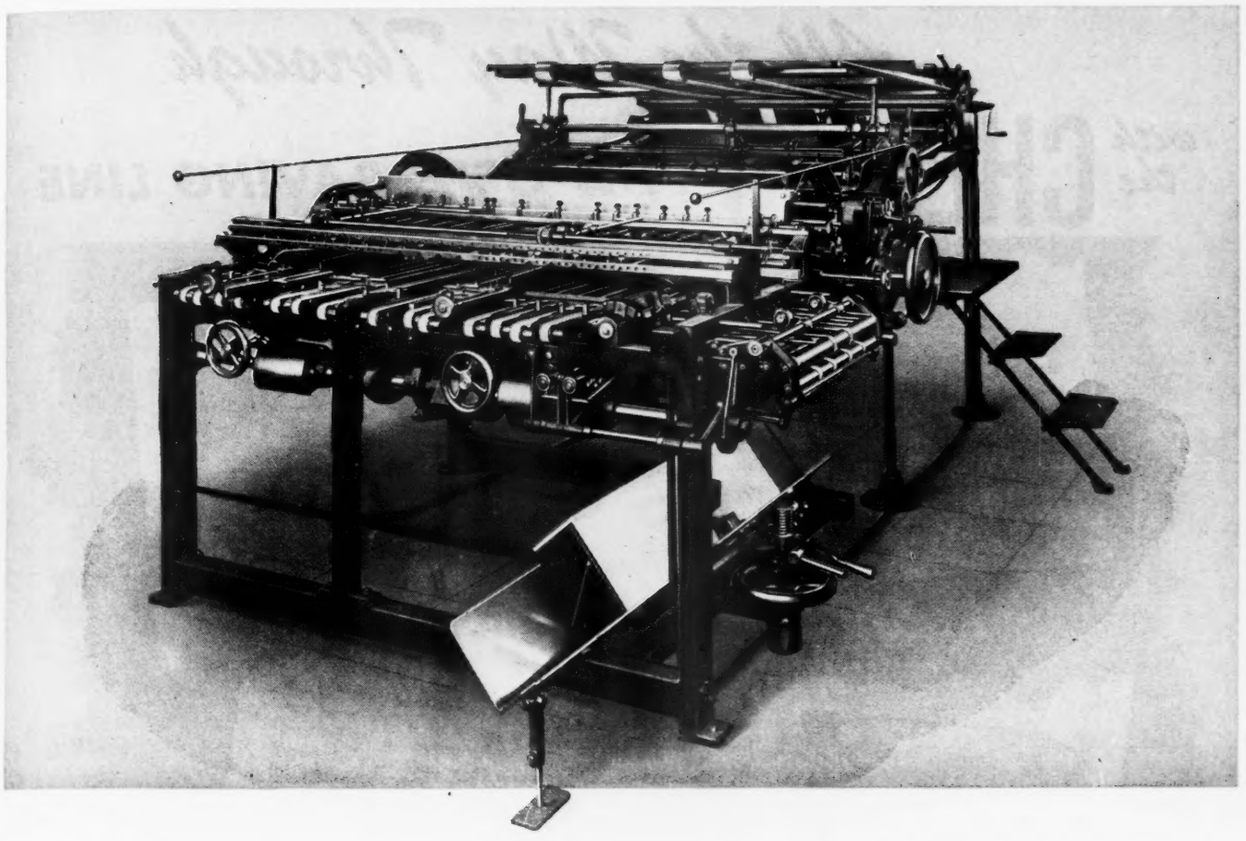
This example of the effective utilization of GAS in a production printing operation is typical of the manner in which modern Gas Equipment serves the graphic arts industry. Wherever you need heat for processing, be sure to check up on GAS and modern Gas Equipment.

Business Manager Wm. H. Pore

Managing Editor Harry R. Pore, Jr.

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE NEW YORK, 17, N. Y.



THE DEXTER #104 DOUBLE SIXTEEN FOLDER

is now built to handle sheets up to 44 x 58"

Printers and binders will welcome the good news that the range of this wellknown and time-proven folder has been increased to include a maximum sheet size of 44 x 58".

This means that the Dexter #104 Double Sixteen now delivers signatures from 4 x 6½" to 11 x 14½" in 16 pages — or 32 pages inserted. This page size range covers practically the entire list of publications and books.

Standard equipment on this folder is the dependable Cross Continuous Feeder. Attachments for *extra* folds are available, if required.

It will be a pleasure to send you further information about the Dexter #104 Double Sixteen Folder, also about other Dexter and Christensen Machines that are boosting production and reducing costs in well-equipped printeries and binderies.

Dexter and Christensen Machines

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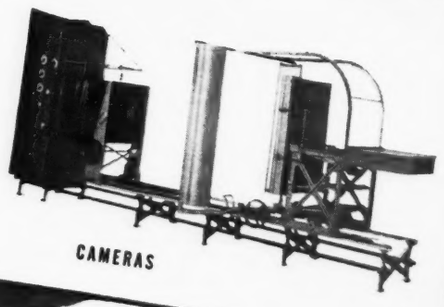
Christensen Machines are built by Christensen Machine Company at Racine, Wis.

All the Way Through

with the CHEMCO PHOTOENGRAVING LINE

Loaded with three different widths of film . . . A simple turn of the crank places the desired width and length of film in position for exposure . . . Exposed film is dropped into light tight box, making it possible to shoot a series of negatives . . . No wasted steps to the darkroom between exposures . . . Controls are simple, easy-to-set . . . Speed production in your camera department.



CAMERAS

STRIPPING TABLE

Chemco Stripping Tables provide an evenly lighted, non-glare surface that is easily adjusted to the most convenient working angle . . . Squaring-up device and adjustable-head stainless steel T square are standard equipment . . . Two drains provide ample capacity for carrying off excess water.

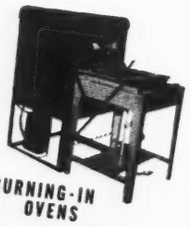
Chemco Cold Grid Printers speed production . . . Make for high fidelity in the plate image . . . Cut production costs . . . Are plugged into an ordinary 110-volt circuit without overloading.

Chemco leakproof developing tanks take plates up to 25" x 32" . . . Prevent rapid evaporation of the developing solution. . . . Stainless steel construction gives long service life.

COLD GRID PRINTERS

DEVELOPING TANKS

ETCHING MACHINES



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Chemco burning-in ovens assure even burn-in . . . Are easy and economical to operate . . . Two types—gas heat or infra-red elements . . . Chemco stainless steel coolers, hooked in tandem with either type, are available for use with running water or for foot pump operation. Continuous power exhaust gives Chemco etching machines fume free operation in the etching room . . . Chemco takes either's plate sizes up to 25" x 32" . . . Chemco all stainless steel construction means long, trouble-free life.

Chemco carries a full line of chemicals, supplies and equipment.

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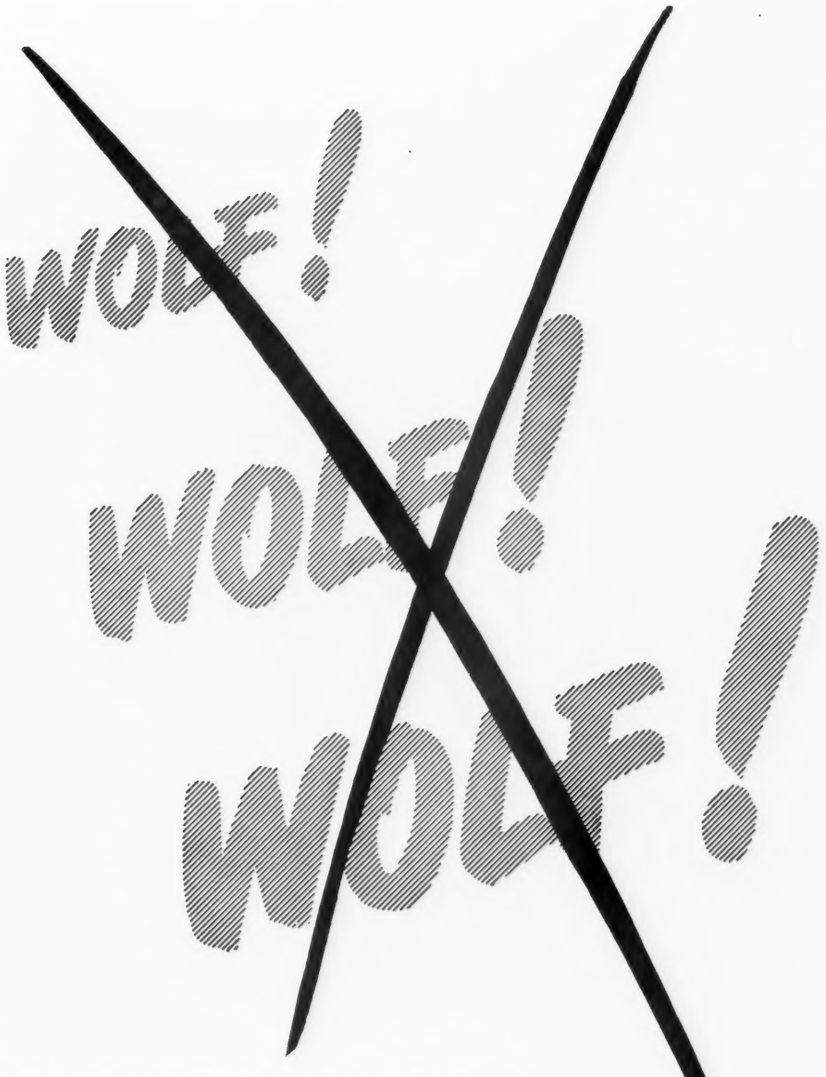

Unfrightened by dire predictions, leaders of American business always have planned with confidence in the future . . . and, in the long run, their faith has paid off. Such courageous leadership helps to *create* good business.

Good business means jobs for those who want to work. It's the best defense against the termites who are working to undermine the individual liberties Americans enjoy. 6593

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BALL and ROLLER BEARINGS

Industry setting new standards of accuracy with new TIMKEN® "Double-Zero" bearings!

UNTIL recently, the most accurate Timken® bearing on the market has been the "Zero" bearing, with a maximum run-out of only 150 millionths of an inch. Then, just a few short months ago, The Timken Roller Bearing Company introduced the "Double-Zero" bearing, with a maximum run-out of 75 millionths of an inch—*twice* as accurate as the Timken "Zero" bearing!

Within the short time since, one industry after another has begun to take advantage of the increased accuracy of the new "Double-Zero" bearing by applying it on grinding machine spindles, small precision rolling mills, gear cutters, lathe spindles, and many other applications where extreme accuracy is essential.

"DOUBLE-ZERO" BEARING IS A "GENERATED UNIT ASSEMBLY"

To achieve the extreme accuracy of the "Double-Zero" bearing, Timken engineers built specialized machine tools, developed measuring devices of extreme accuracy, and perfected new manufacturing processes.

Then, to assure positive roll alignment, long lasting precision, permanent adjustment, and smoother operation, the "Double-Zero" bearing goes through an extra step in manufacture. A natural and true geometric contact is generated between all rotating parts, which results in a "Generated Unit Assembly".

The new "Double-Zero" bearing is the latest example of Timken leadership in serving the bearing needs of all industry. Whenever you buy bearings, it pays to look for the trade-mark "Timken". The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

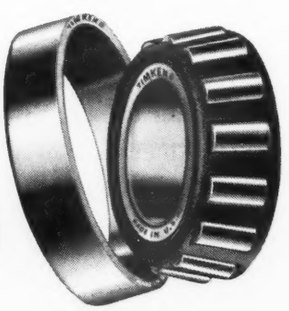
This symbol on a product means its bearings are the best.

A PRECISION TIMKEN BEARING FOR EVERY REQUIREMENT			
CLASS	**"00" (DOUBLE-ZERO)**	**"0" (ZERO)**	**"3" (THREE)**
RUN-OUT	.000075"	.000150"	.000300"
TYPES AVAILABLE	Standard Single Row	Standard Single Row	All types
SIZE RANGE	Up to 10" O.D.	Up to 12" O.D.	Up to 12" O.D.

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▱ BEARING TAKES RADIAL ▯ AND THRUST ▯ LOADS OR ANY COMBINATION

EFFICIENCY...IN NEWSPAPER PRINTING
ECONOMY...IN PRODUCTION SUPPLIES
EASTERN...FOR BOTH!

If you believe your newspaper's printing production efficiency can be improved . . . **economically** . . . let EASTERN newspaper supplies prove that you're right! Designed for every phase of your newspaper printing production . . . pressroom, composing room, stereotype and engraving departments . . . our supplies have been tested and found ideal in many of America's finest newspaper printing plants.

PLATE-TAK - Super-Thin Cut Mounting Tape, unequalled for mounting and positioning any type of cut on wood or metal base.

FLECTO - Gummed Backing Felt, accurately gauged, clean-tearing, and compounded with fast-binding adhesive for any make dry mat.

TRU-MOLD - The Cork Molding Blanket of perfect density, proper flexibility. Available in Medium, Medium-Hard and Hard densities.

ROUTING MACHINES • ROYLE ROUTING CUTTERS • EASTERN CIRCULAR SAWS • ROUTER BELTS IN ALL SIZES • DIRECT PRESSURE MOLDING MATERIALS • CURVED AND FLAT CASTING BOARD • COMPOSING ROOM AND STEREOTYPE EQUIPMENT • STEREOTYPE HAND MITTS • PRESS BLANKETS • THE NEW DICK MAILER

REPRESENTING:

STA-HI CORPORATION
- Master Former
- Premier Shaver
- Power Form Lift
- Vacuum Casting Box

AMERICAN STEEL CHASE COMPANY
- Newspaper Chases
- Make-Up Trucks

These and other supplies and equipment can better your printing production. They are fully illustrated and described in our catalog. ORDER THEM TODAY!

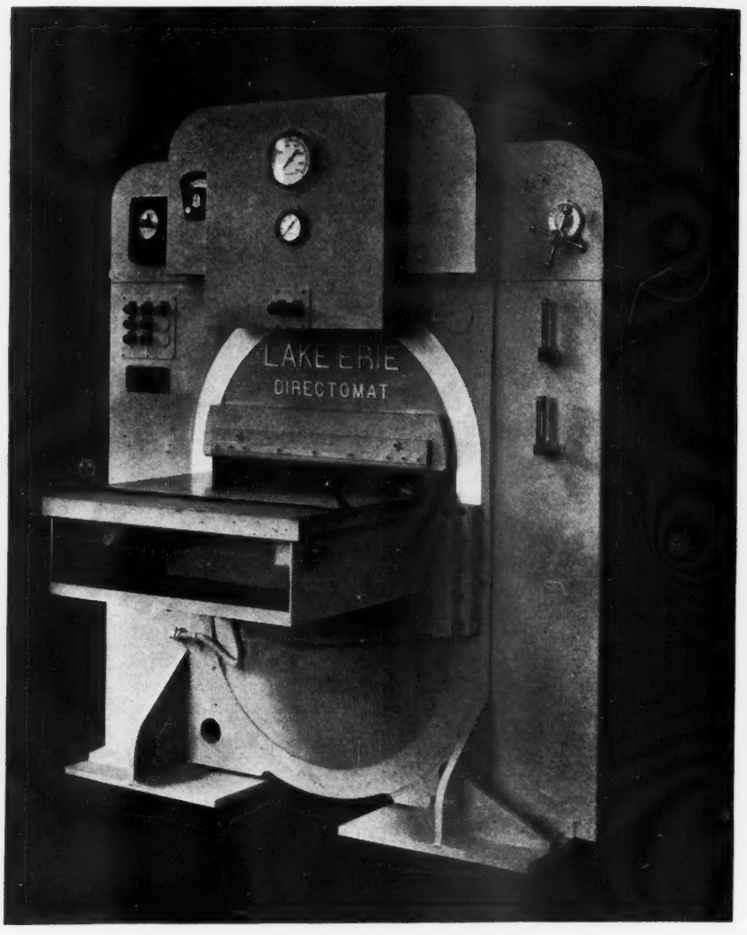
NOTE: IF YOU DO NOT HAVE A COPY OF OUR CATALOG, WRITE FOR ONE TODAY.

Eastern for Economy

EASTERN NEWSPAPER SUPPLY, INC.
9603 Northern Boulevard, Corona, L. I., New York

More than 200 LAKE ERIE DIRECTOMATS in leading plants prove the advantages of

DIRECT PRESSURE MAT MOLDING



SHARPER BLACK-AND-WHITE MATS

The DIRECTOMAT produces sharp, deep, uniform mats, making possible the higher quality reproduction being demanded by advertisers, agencies and publishers alike.

REDUCES STRETCH AND BUCKLING

The DIRECTOMAT reduces mat stretch and buckling to a minimum... permits shrinkage as desired for black-and-white.

ACCURATE COLOR REGISTER

All color work can be molded and uniformly dried in one automatically controlled cycle that assures accurate register.

CAPACITY OF TWO MAT ROLLERS

The DIRECTOMAT equipped for double-sided operation has the capacity of two mat rollers and requires the space of only one.

NO OPERATOR FATIGUE

There is no extra footwork with DIRECTOMAT molding. Operator performs all operations from one comfortable position.

THE TREND to direct pressure mat molding is so pronounced today that there can be no further question about the superiority of the equipment, the method, or the mats produced with it. In plant after plant where decisions are reached to improve quality and efficiency, DIRECTOMAT presses are being installed. Already, leading dailies and commercial plants have more than 200 in service. And new installations are being made at the fastest rate ever. If you are among those who want to improve quality and efficiency... or if you want to provide for R.O.P. color work now or later—it will pay you to get *complete* facts about the DIRECTOMAT at once.

WRITE for this new Bulletin. Contains *complete* description of the DIRECTOMAT—design, construction, operation. No obligation.

LAKE ERIE ENGINEERING CORP.
BUFFALO, N.Y. U.S.A.

LAKE ERIE ENGINEERING CORP.
568 Woodward Avenue, Buffalo 17, New York
Offices in Principal Cities and Foreign Countries

★

● Leading manufacturer of hydraulic presses—all sizes and types—stereotype molding... rubber and plastic plate making... rubber vulcanizing... metal working... forging... metal extrusion... plastic molding... processing... special purpose.

Try the amazing

dayco FOUNTAIN DIVIDER

LEAKPROOF · ADJUSTABLE · EASY TO INSTALL

Gives years of service
Holds its shape
Adjustable from center
Easily cleaned
Quickly installed
Quickly adjusted
No strain on fountain ratchet
Guaranteed snug and leakproof

The Dayco Fountain Divider gives full control of the ink fountain at the divider. A specially-treated felt filler forms a light cushion with all parts of the fountain, and follows the blade to any position. Saves time. Saves work. Order yours today. *Write: The Dayton Rubber Co., Dayton 1, Ohio.*

Why Cut Rollers for Split Color Runs?

dayco

COLOR SEPARATORS
save rollers . . . save time

Now you can do split color work *without cutting rollers.* Dayco Color Separators save rollers, save press time.

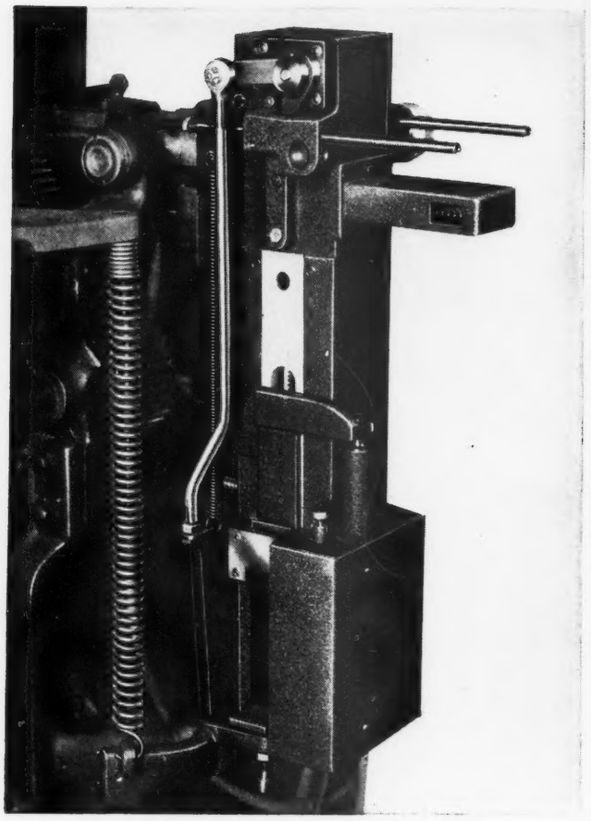
For all types of rollers, for all inks, Dayco Color Separators are easy to install, simple to operate. Pay for themselves in roller savings.

by **Dayton Rubber**

Pioneers of Improvements for Better Printing with lithographic, letterpress & newspaper Rollers; Color Separators and Fountain Dividers.

NO DRILLING or TAPPING *of machine frame* REQUIRED

...to attach the STAR Automatic Spacer to your present Linotype or Intertype



The STAR Automatic Quadding Attachment makes it unnecessary to sacrifice your present typesetting machines—and brings savings of 40% or better in setting matter that calls for centering or left or right flush alignment.

A further—and *exclusive* advantage is its ability to center on any given measure on the *left side of the slug!*

This device is attached to the left side of the vise frame without drilling or tapping the frame of the basic machine on which it is mounted. Should you later on have occasion to transfer the attachment to another Linotype or Intertype, the one on which it originally served will be in no way impaired or defaced—to possibly reduce its disposal value.

OPERATORS WILL APPRECIATE THIS The STAR Quadder is located away from the squirt area. And, as a *further* safety measure, an electric pump stop minimizes the possibility of squirts. In the remote event that they *do* occur, they are treated same as on non-quadding machine.

AND THE BOSS WILL LIKE THIS The STAR is simple, has comparatively few parts, is time-proven and as nearly foolproof as anything mechanical can be. It delivers every spacing advantage you thought you'd have to buy a complete new typesetting machine to get—and with the STAR, *your Linotype is never out of operation due to any quadder failure.*

Reasonably prompt delivery may be had. Write for new folder giving detailed information

PRECISION TRADE ★ MARK

LINOTYPE PARTS COMPANY

INCORPORATED

Factory and Main Office
SOUTH HACKENSACK, N. J.

Branch Office:
1327 BROADWAY, KANSAS CITY 6, MO.

CHICAGO • MINNEAPOLIS • DENVER • NEW YORK • BOSTON

The Police Blotter
55 W. Fulton Civic Clubs Elect Staff
Rails' Rally Gives Zip to Stock Market
Selling Flurry Hits Grain Prices
Cash Rites Set At Lawrenceville
Atlanta Builder's P. O. Bid Is Low
Closing N. Y. Stock Quotations
THINKING ABOUT UNDER-PRINTING ?
Buying Picks Up In Bond Market
New York Curb Sales
Bond Sales
Decatur Merchants Elect Charles Lyon
DELTA BEATS OWN RECORD
Atlanta Sleuth Freed on Bond At Columbus
POLICE BLOTTER
TASTE THE SECRET!
ATLANTIC ALE and BEER
Are Now Schweitzer-ized
by the...

Editor & Publisher says that, so far as they know, underprinting, in this country, began last December when the Atlanta (Ga.) Constitution underprinted a Delta Air Lines advertisement. An IPI ink was used.

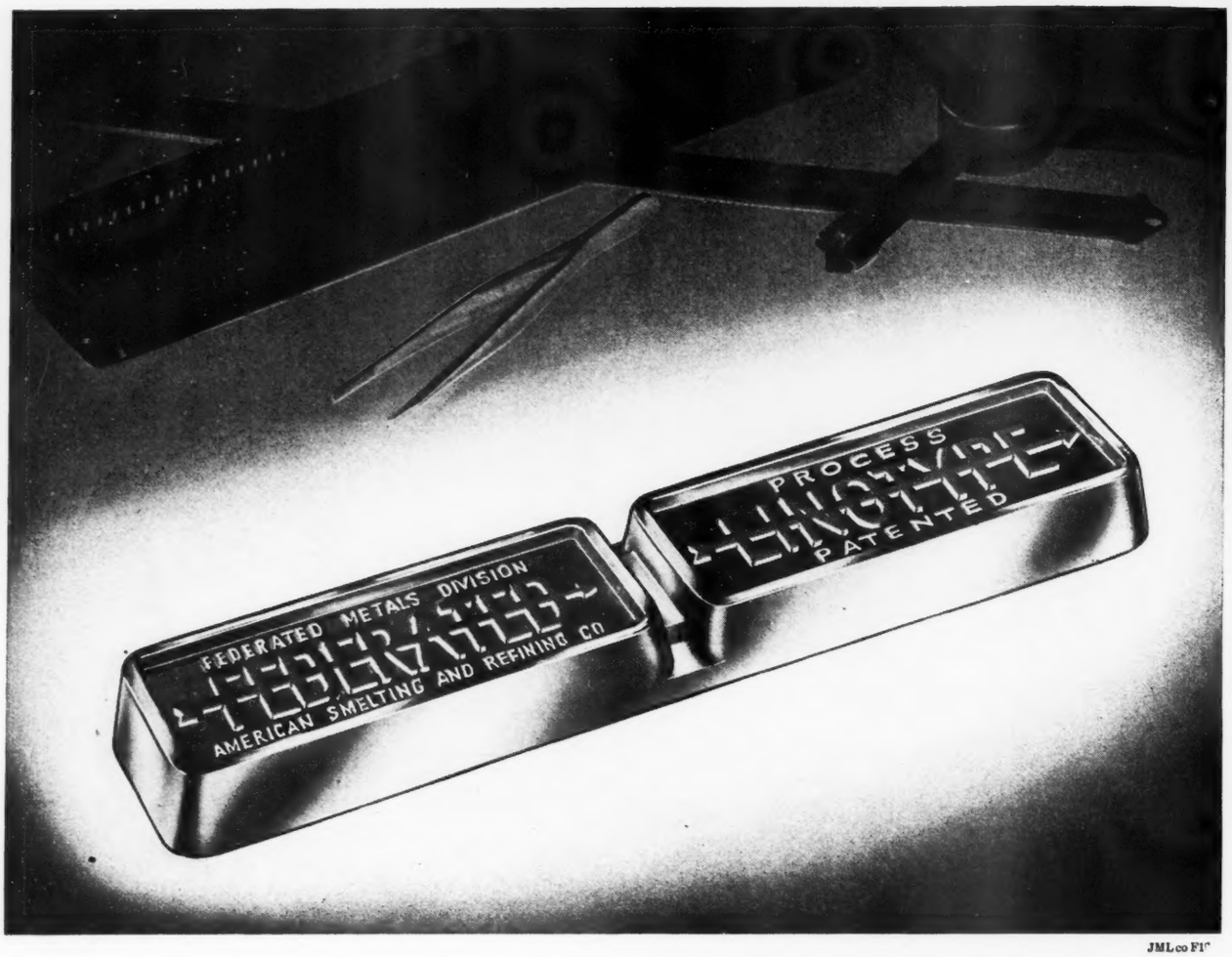
Burke Dowling Adams, Montclair, N. J. advertising agency which prepared the advertisement, has written us as follows:

"A special ink was needed. Certain colors were entirely too brilliant and, in our opinion, would have resulted in unfavorable reader reaction. They were unpleasant even in screened form.

"The best results were secured with the ink you delivered, screened with a No. 4 Ben Day. We feel that there is a very desirable quality to this ink which we cannot describe except to say that it has a kind of pale opacity."

ipi *Division of Interchemical Corporation, Dept. A, 350 Fifth Ave., New York 1, New York.*

®ipi



JMLco F1°

"TYPE METAL IS A TOOL . . .

"And from the viewpoint of management," a leading printer adds, "we have only three tools. . . . men, machines, and metal."

"Our men are the best to be had. Our machines are maintained in perfect condition. But if we don't get perfect metal we might as well have third-rate men and poorly maintained machines."

Federated Process Type Metals guarantee you slugs that won't dish in make-ready, metal that will stand up on press, metal that solidifies properly, that reacts perfectly to normal heat control.

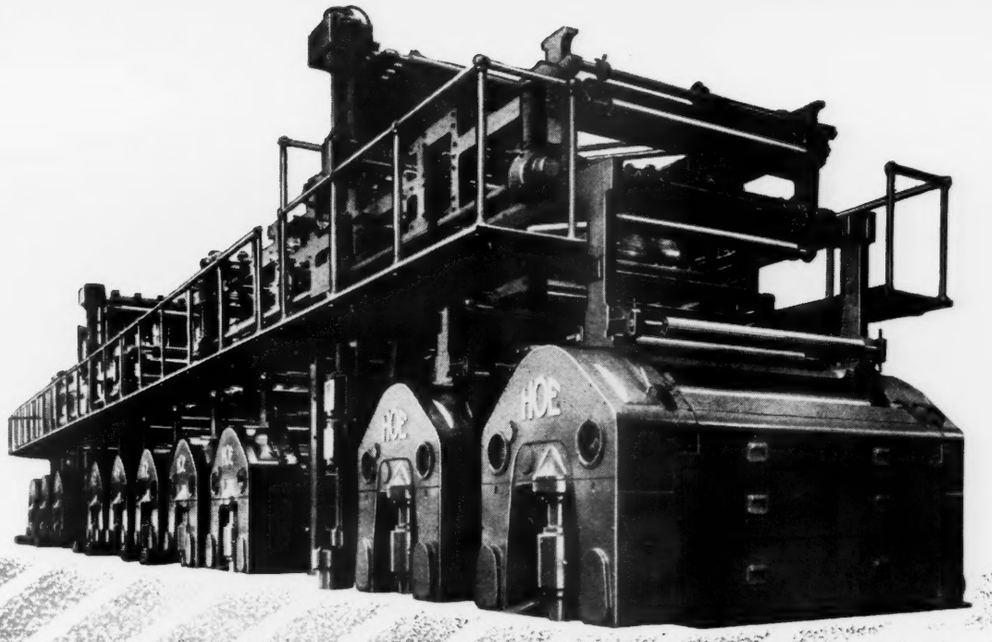
Federated's rigid control of chemical composition and manufacturing processes are your assurance of quality printing and unfailing uniformity.

See Federated first for linotype, monotype, stereotype, and electrotype metals; MOR-TIN correction alloys, electrotypers' foil, copper anodes, and all other metals for the graphic arts industry.

Federated first in the non ferrous field FMD

Federated METALS

Division of American Smelting and Refining Company, 120 Broadway, New York 5, N.Y.



Designed for

Outstanding Performance

Climaxing a century of newspaper press construction, the new HOE COLOR-CONVERTIBLE NEWSPAPER PRESS is outstanding for quality and volume of production.

Contributing to its notable performance are such factors as extreme simplicity of design, precision and convenience of controls, ease of web-threading, speedier plate lock-up, visual micrometer impression adjustment, and full speed splicing.

In addition to these features, it offers an unmatched adaptability to R.O.P. color facilities to meet the steadily increasing demands for more and more color in the daily newspaper.

Ease of operation and maintenance are further important factors toward insuring a steady top performance from the Hoe Color-Convertible Newspaper Press.

R. HOE & CO., INC.

910 East 138th Street, New York 54, N. Y.

BRANCHES: BOSTON • CHICAGO • SAN FRANCISCO

How to make experts out of your pressmen!

You can make your pressmen aspire to produce high quality color work,

to beat his chest when he does it and be proud of the finished jobs he can produce in your plant.

Just give him IDEAL MASTERLITH (Vulcanized-Oil) Rollers to use.

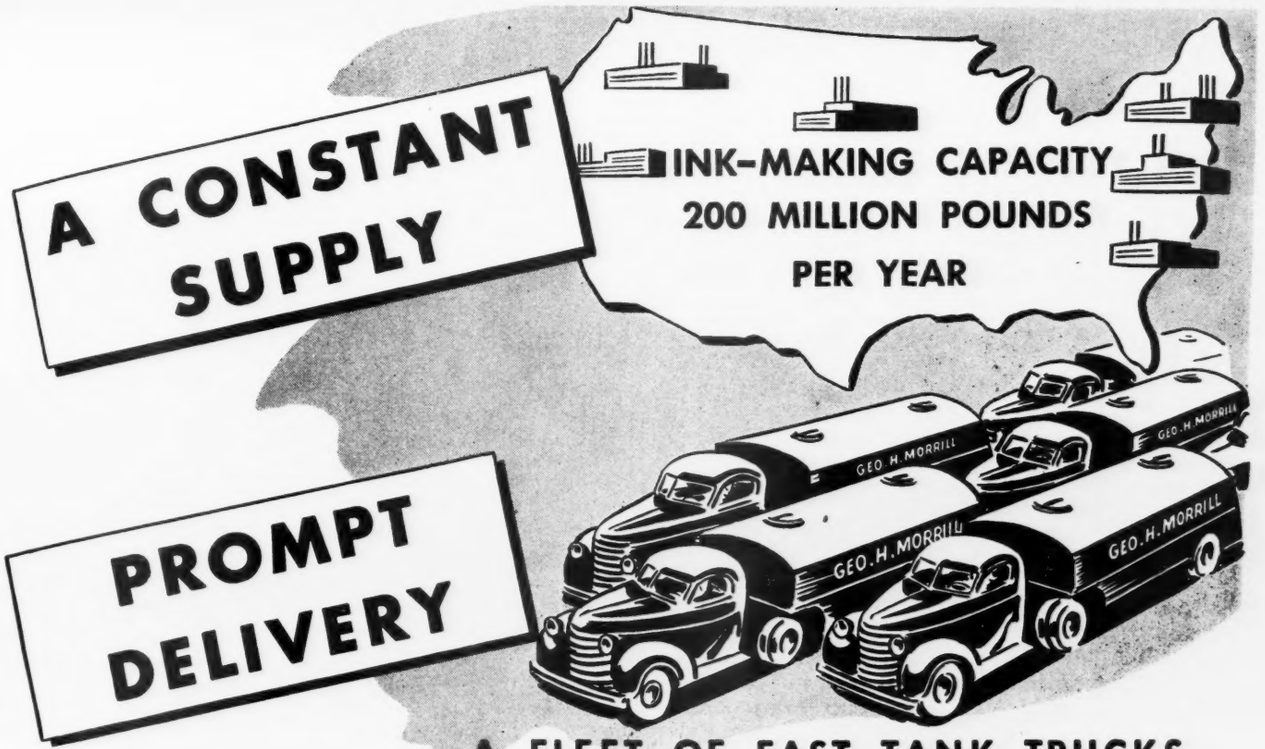
When he sees how they actually control water on his press and give him an even spread of color from front to back — he knows that at last he has the proper tools to turn out a craftsman-like job.
He will ever after be conscious of the highest uniform quality in every job he turns out.

IT'S AN Ideal Year For ROLLERS

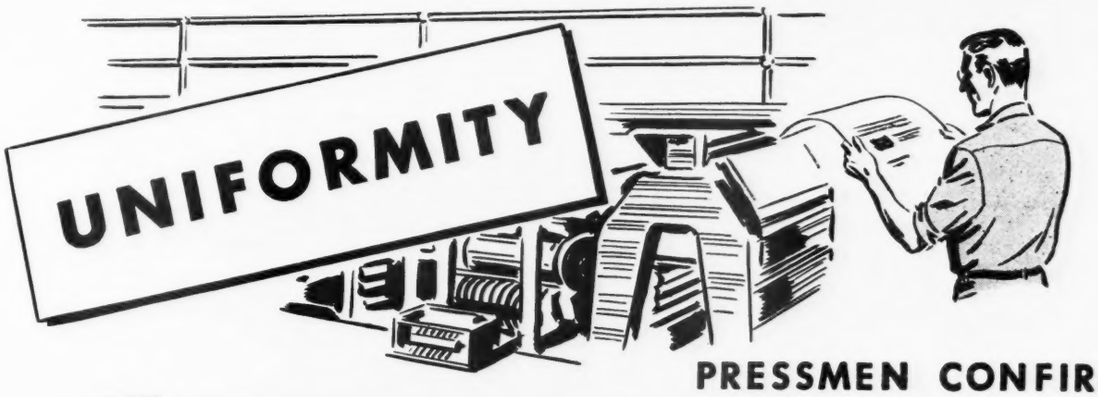
IDEAL ROLLER & MANUFACTURING CO.

☆ **2512 West Twenty-fourth Street, Chicago 8, Illinois** ☆

21-24 Thirty-ninth Avenue, Long Island City 1, New York



A FLEET OF FAST TANK TRUCKS
OPERATING FROM STRATEGIC POINTS



PRESSMEN CONFIRM IT

That's what is back of

GEO. H. MORRILL CO.

DIVISION OF SUN CHEMICAL CORPORATION

10TH STREET & 44TH AVE., LONG ISLAND CITY 1, N. Y.

WORLD'S LARGEST MANUFACTURER OF NEWSPAPER INKS

BOSTON 16, MASSACHUSETTS • CHICAGO 7, ILLINOIS • ST. LOUIS 3, MISSOURI
130 Clarendon Street 42 North Racine Avenue 1514 Pine Street

FORT WORTH 2, TEXAS • DETROIT 4, MICHIGAN
1300 Throckmorton Street 8747 Brandt Street

NEW YORK · BOSTON · CHICAGO · DETROIT
MINNEAPOLIS · ST. LOUIS · FORT WORTH
SAN FRANCISCO · LOS ANGELES · SEATTLE

Sun CHEMICAL CORPORATION

Heat at the HEART of the Metal and Save 40% of Your Fuel . . .

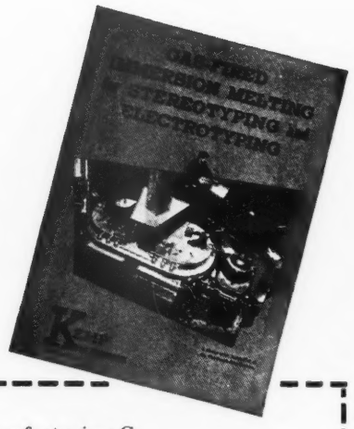
Kemp heat is not outside, fighting its way through a heavy pot; but inside, passing rapidly through shells of thin metal.

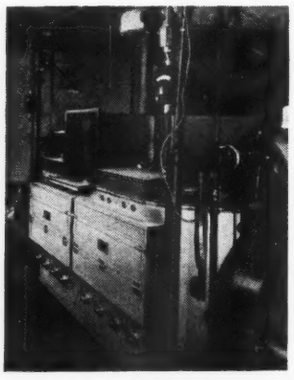
A full 12-ton pot of metal, out of service for 48 hours, can be brought to 600° F. in less than 2 hours with Kemp Immersion Heating.

Moreover, dross formation is cut to a minimum (and costs to the bone) because Kemp Immersion Heating equipment by-passes spent gases to discharge over the melt, forming a layer of inert gases which prevents oxidation and dross formation.

Uniform temperature throughout the pot—as hot at the top as at the bottom—is the way to lick dross formation in type metal.

We can't tell you the whole story here . . . but any Kemp representative will be glad to. There is one not far from you . . . drop us a line if you are interested in saving up to 40% in type metal melting costs or send for the Kemp Bulletin No. IE-10 on Immersion Melting.





12-Ton Stereotype Pot arranged to service two automatic casting machines. Installation shows method of piping and temperature controls.

The C. M. Kemp Manufacturing Co.
405 East Oliver Street
Baltimore 2, Maryland

Please send me your NEW Bulletin No. IE-10 on Immersion Melting. ☐

Please send a Kemp representative in to see me. ☐

Name .....

Company .....

Street .....

City ..... Zone .....

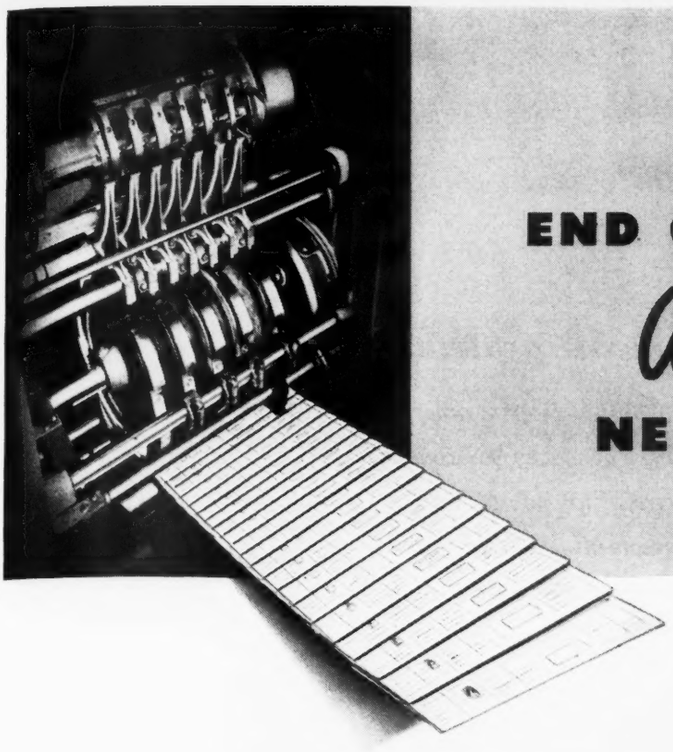
State .....

GPEE-4

KEMP of BALTIMORE

The C. M. KEMP Manufacturing Co., 405 East Oliver Street, Baltimore 2, Maryland

PRECISION CARBURETORS • BURNERS FOR INDUSTRIAL HEAT CONTROL • FIRE-CHECKS AND OTHER SAFETY DEVICES ATMOSPHERE GENERATORS • INERT GAS PRODUCERS • ADSORPTIVE DRYER SYSTEMS FOR PROCESS CONTROL



END OF THE LINE...

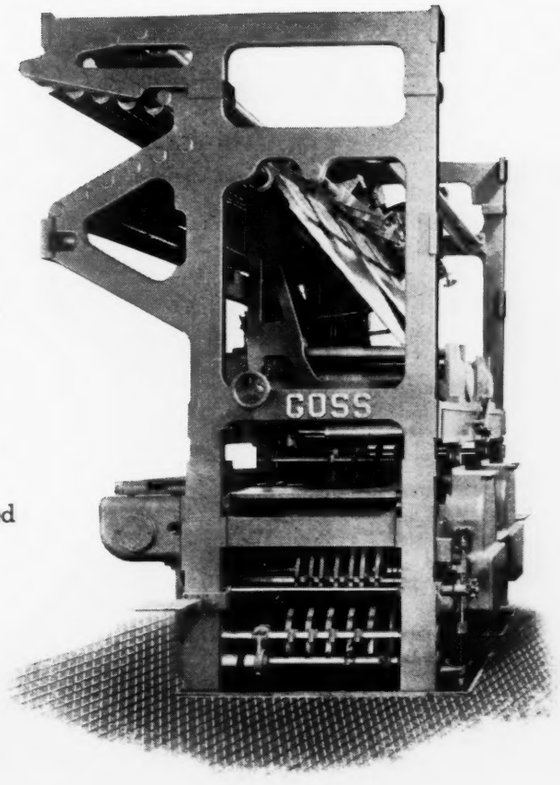
all out

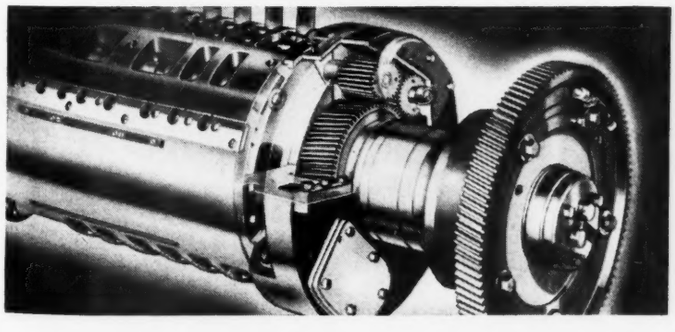
NEATLY FOLDED

GOSS UNI-FLOW FOLDER

The end result of good printing is a properly folded paper. And you've got it with a Goss Headliner Press and Uni-Flow Folder!

Papers are neatly and accurately folded and *delivered folded-edge-forward.* No adjustments of folding or cutting cylinders are required whether the run is 8 or 80 pages. The Uni-Flow is the only one made with *fully enclosed folding mechanism*—ruggedly constructed with ball and roller bearings throughout, helical and spiral bevel gears, dynamically and statically balanced rotating parts with automatic pressure oiling.





At left: Phantom view of the Goss patented rotating folding motion. All moving parts mounted in pre-loaded roller bearings with all gearing completely enclosed in oil-tight housings and *operating in oil.* Eliminates wear and abrasive action of paper dust and grit on folders.

THE GOSS PRINTING PRESS CO.
1535 S. PAULINA ST., CHICAGO 8
Duplex Division: Battle Creek, Mich.
Goss Printing Press Co., Ltd., Preston, England

it's **GOSS** *again*

"IT'S GOT TO BE GOOD TO BE GOSS"

God bless you, mister

...thousands of Cancer patients are grateful to you!

Cancer's annual toll of 200,000 lives is grim proof of the need for your continued generosity. The money you contribute to the American Cancer Society helps pay for the development of methods of treatment which are now saving about one-quarter of the people who are stricken with Cancer... people who might otherwise have died. Your money supports the work of more than a thousand specialists who are fighting to find the cause and cure of Cancer. And it finances a vast education program that trains professional groups, tells the public how to recognize Cancer and what to do about it.

Your life—the life of everyone you know—is at stake. Your investment can mean health and happiness to millions. Thank you... and God Bless You, Mister.

just mail it to

CANCER

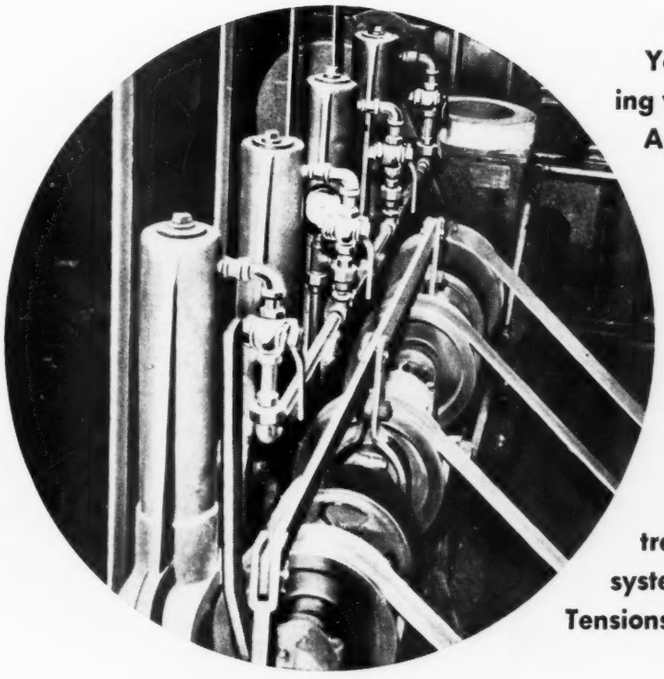
Just write "CANCER" on the envelope containing your contribution. It will be delivered to the American Cancer Society office in your state.

WEB CONTROL

FROM A FEATHERY TOUCH TO A BIG BEAR HUG

AND ALL STEPS IN BETWEEN...

all Automatically



Each belt is controlled by its own air-piston automatically adjusting its belt to selected tension. *NOTE: When red button is pushed, all air pistons act together and automatically as one huge air brake.*

You select the tension needed for the unwinding web. With WOOD *Pneumatic* TENSION, that's ALL you do! During the run, and during splices, tension remains unwavering because the resiliency of compressed air guards against any deviation. Yes, WOOD *Pneumatic* Tension offers almost unbelievable selectivity and sensitivity . . . thanks to the gently powerful action of air pressures.

Regardless of the type reels you are using, uniform belt tension for roll-fed presses is yours with this WOOD Unit. Write for illustrated brochures showing the complete WOOD system of automatic paper feeding: Pneumatic Tensions, Autopasters, Reels.

Pneumatic tensions with fixed belts for newsprint . . . with running belts for delicate stock and paper converting.

IF IT'S Wood IT'S GOOD

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY • SALES OFFICE: 501 FIFTH AVENUE, NEW YORK 17

Matrix Contrast Service

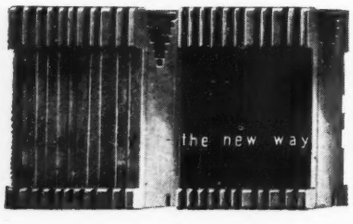
REDUCES ERRORS IN RAILROADED NEWS

Manager Nuts Cecil Here's Your Answer In Six Sensational
Roland Claims He Retained Knowledge While Ohio Tycoon
Chicago Tribune Needs Blows On Screen Exposure Rival
Warner Crushes Nazi
Seven in Valley of Canadian Clan and Better Cup
tured her jaw
o of her teeth in
Her attorneys
physicians and dentists
right to estbalish a standa
permits negligent acts wh
be recognized by ordinary
This professional technique
veloped only after stud
practice under men of exp
negligence may not b
by yamen merely becau
found to have b
could be bro

Uncle Mat says

With Matrix Contrast Service it's easier to correct lines before they are cast...easier to select mats from the pi stacker.

Editors and publishers agree that nothing is so aggravating as typographical errors in the columns of their newspapers. A simple, economical way to reduce these errors is the use of Matrix Contrast Service on line composing machines. In fact, among hundreds of newspaper publishers surveyed, the consensus was that Matrix Contrast Service reduces errors at least one-third, increases production and enables them to railroad news in emergencies and still have a clean looking paper.



Empire State Building, New York 1, N. Y.—326 W. Madison Street, Chicago 6, Ill.—1105 Trenton Street, Los Angeles 15, Calif.—Sole licensees of the Percy L. Hill Matrix Contrast Patent No. 1,796,023, other patent pending. European Agents: Funditor, Ltd., 3 Woodbridge St., Clerkenwell Green, London, E. C. 1.

Matrix Contrast Service

Equipment Investigation Reveals Research Problems

EIGHTEEN months ago we sent out to the printing trade 10,000 questionnaires in which we solicited the printers' aid in determining the features which he sought in a medium sized automatic press. The responses to this questionnaire were somewhat of a surprise to us in that more than 2000 replies were received. These were carefully analyzed and the consensus has served as a guide in our further investigation of the subject. Even in limiting our investigation to a rather narrow field, we have found the problem to be complex and there remain many questions which research has not yet answered. When the average printer expresses his desire for accurate register in a printing press, for example, we do not know whether he is aware of the extent to which misregister may be produced by relatively slight climatic changes over which the press builder has no control. When the printer expresses a desire for minimum makeready, we are not sure he realizes that in only 8% of the average time reported as makeready does the design and construction of the press have any part and in the 8% only a relatively small part.

Aptitude Tests *applied to applicants for position of inspector in specialties plant bindery — Improved performance resulted*

By JOHN W. ROCKEFELLER, Jr.*

**Printing Management Engineer, New York. Abstracts from address delivered before Binders' Group, New York Employing Printers Assoc., Inc., March 1949.*

IN APRIL 1941 we were engaged in a plant manufacturing printed specialties. The inspection department of the bindery was comprised of 29 inspectors whose sole duty was to inspect individual printed sheets. Over a month's time the output (and general quality of the work) of each operative was measured and recorded. Against the general average of 80 sheets an hour, the most proficient operatives inspected over 100 and their work showed fewer mistakes. A test was devised by which it was hoped that applicants for this type of work could be successfully rated before their training period. With the assurance that no attempt would be made to improve production by releasing those with the poorest showing, everyone of the 29 operatives took the test and were graded.

The results of the tests showed as much variation as the monthly production of the individuals. The monthly averages of those making the lowest ten grades on the tests were isolated from the rest of the group and it was found that the average of the remainder showed a 15% improvement over the entire group average.

A similar test was made in another plant with like results. It was then applied to all applicants for positions of inspector. Within a year the production of the entire department had been improved 15% through the screening of new applicants. In another bindery, manual dexterity of applicants was tested by the application of a perforated block test in which the applicant inserted three straight pins at a time in the perforations of a small wooden block, the elapsed time for the filling of all perforations being noted. The records of applicants thus screened were carefully watched and it was noted that after two weeks on the job their average production was well above that of unscreened applicants previously employed.

In the bindery, more than in any other department of the average printing plant, wages constitute a large part of overall costs. A production increase of 15% will result in cost savings of an approximately equal figure and may double the profit of the department. In spite of the advantages of modern equipment, the most important factor in printing continues to be the operative who, on the average, is paid at a rate about 10 times as high as the machine. In spite of this, the selection of the applicant for employment continues to be one of the most haphazard of all procedures in what is rather frequently a haphazard industry. Our industry is one in which the speed of production of the machine is almost invariably under the control of the operative. This is true in the case of the Linotype machines, printing presses and much of our bindery equipment. In the years up to 1938, we saw a buyers' market for labor as well as materials. The employer could carefully screen all applicants and choose only those shown by tests to merit employment and training.

In one plant we have had the opportunity to follow the ups and downs of production on a single non-variable operation over a period of eight years. Wages paid to a group on this operation in 1938 were 65½c per employee hour. Between 1938 and 1942 some of the operatives left to take positions in defense plants. The demand for employees so outstripped the supply that it was necessary to abandon screening tests and to engage any applicants available.

In January 1942, hourly wage costs had risen to 67½c and production dropped from 2450 units to 2090 units.

Observe the Equipment Precautions

SINCE equipment is purchased on the basis of using it for a period of 10 years or more, the purchaser should satisfy himself as to the production possibilities of new equipment, not only at the time of purchase, but after several years' use. While most of these precautions may appear obvious, it is surprising with what frequently they appear to be ignored and the original purchase price over-emphasized.

Six months later wage costs had increased another 7c and production decreased another 250 units. In 1943, after a steady climb, the wage costs had increased to 78c per hour and production dropped to 1130 units. The wage cost per thousand units output had thus doubled over a period of five years. Over this time, to be sure, other variables had been introduced. The fact that it was easy to obtain employment resulted in a large labor turnover and less interest in the job. However, it was estimated that the elimination of applicant screening alone had resulted in a production drop of at least 20%. The intelligent selection of job applicants, one of the most important steps, towards cost reduction, is still one seldom taken in our industry.

The present trend towards a buyers' market once again makes possible the introduction of tests for job applicants. Such tests, of course, should be reinstituted in order to eliminate the expense of training individuals who show no promise of gaining proficiency.

Since the greatest investment on the part of the employer is in the worker, it follows that conditions should be such as to permit him to produce at maximum efficiency. Giving the worker a comfortable place in which to work is even more important than supplying proper maintenance for machinery. Such factors as temperature, humidity, light and noise are all reflected in both the quality and quantity of the individual's output and, unless these factors are controlled, they adversely affect the operating statements.

One respect in which the individual differs from the machine is his response to incentives. Both in times of war and peace, the most effective stimulus to productive effort appears to be monetary reward. The effect, of course, varies greatly from one individual to another. Certain psychological tests have been devised to determine beforehand the applicant's response to such stimuli, but to date we have not employed them. Most employers know that the worker's interest plays an important part in successful plant operation. In an age where the trend seems to be separation of employers' and employees' interests, the employer must take the initiative in convincing the worker that they are one. In so far as the worker is concerned, management has the responsibility for:

1. Proper selection
2. Comfortable and agreeable environment
3. Developing the worker's desire to cooperate

It is altogether likely that the average printer and perhaps the average trade binder is inclined to regard his investment in the worker and in equipment as two separate ideas, not giving sufficient weight to the fact that the two go together and one is of little use without the other. Even at today's high prices of equipment, in any shop operating on a two shift basis, the rate of depreciation of equipment is small compared with the wages of the worker using it and in the selection of new equipment the first problem actually resolves itself into the question of how much additional may be paid in reserve or depreciation in order to make the worker more productive. After this problem has been solved, there remains, of course, the additional problem of raising the price of the equipment which appears justified through the original study. Equipment cheap to buy is frequently expensive to use and today when we appear to be entering an era of greater competition, the companies in the most favorable position are those which purchased equipment on the basis of its being most economical in making the worker more productive.

The problem of comparing different makes of equipment designed for the same purpose has many ramifications and average production figures may be misleading. In the matter of automatic presses, for example, we have found that the best and newest presses are frequently the recipients of the most difficult work. This will tend to reduce their speed and lower their apparent productive averages. Under such circumstances, an inferior press may show a higher rate of production than a superior and more flexible one. In the selection of bindery equipment, the same tests should be applied as in the selection of presses. The purchaser should satisfy himself not only as to the production possibility on a given type of job, but also upon the versatility of the press, the scope of which frequently determines the amount of time it can be operated monthly and the rate of depreciation per chargeable hour.

A folder which can be used on a variety of jobs may show a lower depreciation charge than a cheaper folder, the scope of operations of which is limited. In the case of printing presses, we have found that presses which show about the same production on perfect material may show widely different averages of output on paper, for example, which has curled edges or which, by reason of a dull cutting knife, may cause feeder trouble. We would be inclined to look for parallel conditions in bindery equipment selection.

LETTERS
TO THE EDITOR

IN *Printing Equipment Engineer*, edition for March 1949, page 32, a report is made of my address at the Northwest Mechanical Conference. I believe that in the transmission of my speech to you for publication, some misinterpretation of my remarks has been developed. I am enclosing a copy of my speech for your reference.

In the first paragraph of the report of my address, it is incorrectly stated that the factors of offset on the first impression cylinders, ink misting and hard drying are being met now, as news inks do not dry hard immediately.

In the second paragraph of the report it is stated "that furnace black has invaded the channel black field in production of newspaper ink since the war because of the higher production possibilities of furnace black." I made no reference to furnace black invading the newspaper ink field because of higher production possibilities.

In the fourth paragraph of your report, the warning inference is wrong in that 91% to 91% is about the maximum relative blackness obtainable in news ink regardless of percentage of carbon. Additional carbon, beyond that necessary to reach this relative blackness, adds no measurable blackness to the print.

In the fifth paragraph of your report it is stated: "The efforts of his company are now being directed toward developing a black or combination of blacks which will permit pigment concentrations to be held at a fairly low level without loss of viscosity." My address was made without reference to my company, but was a general ink industry point of view.

In the second column, page 50, your March issue, your reporter states: "Mr. Watson raised the question of whether newsprint might not be altered to accommodate better inks rather than to try to make the ink fit the paper. The answer to the perfect drying news ink, he said, will probably be found in some redesigning of newsprint."

I believe if you compare this paragraph with page 6 of my transcript you will see that an incorrect inference may be derived from your report. The paragraph should have read:

"Is newsprint, as we know it, the best that can be produced for the purpose at the price level? What would it cost to include some sizing in the beater? What would it cost to apply moderate calendering, and what about a little coating on the sheet? These factors undoubtedly have been studied, at least to some degree. Such changes in newsprint would probably require corresponding changes in the present news ink. *It is likely that the answer to the perfect drying newspaper ink*

Halftone Screens

(Abstracted from a report by Floyd C. Larson, of the discussion *How It's Done By Offset*, at the February 1949 meeting of the Chicago Craftsmen's Club.)

IN lengthy discussion on the selection of the best halftone screen to use for offset, John Skahill of Roberts & Porter, New York, a member of the panel of litho experts, said that the 133 line screen was most commonly used, with some use being made of the 120 and 150 line screens. He also noted that 300 line screens have been used to good advantage and that in the reproduction of some art subjects a 400 line screen had proven most satisfactory.

without additional equipment will also involve some redesigning of paper."

Jack Watson
Manager Technical Service
J. M. Huber Corp.

Correction

TYPOGRAPHICALLY speaking, mistakes occur in printed matter despite modern precautions which are both elaborate and costly. Human nature being what it is, makes us realize that lines and words will occasionally be transposed, mis-spelled and even left out entirely.

Such was the case in the article entitled *Plant Appraisal* by Robert Royden Greer, Printing Engineer of Los Angeles, which appeared in the March issue of *Printing Equipment Engineer*. The italicized words in the following paragraph were missing from the article, as follows:

As an example (one of many): A year ago it was noted that a 40-year old high-base Model 5 Linotype (without universal ejector, and having only the two molds) was appraised as is on the floor for *$4000. It was worth less than half. The tax-schedule calls for* a 15-year depreciation on this machine, meaning that all that was gained was $130 extra depreciation for this excess valuation—with the tax authorities able to collect it even years later.

"I know that the item has a dynamic need to be conveyed to the many plant owners in the country," comments Mr. Greer. "I have been advised by others, as well as my own discoveries, that appraisals are appallingly deficient in their value."

Printing Equipment Engineer agrees with Mr. Greer and regrets the omission.

Joe Lilly

Fascinating story of his career in early days of typecasting machinery

By HARRY A. MILLER*

**Superintendent, Mechanical Depts., Dayton (O.) Daily News.*

HOSTILE compositors threatened to throw Joe Lilly into the Bay when he sought to install typecasting machinery in San Francisco.

That was in 1906.

"It was right after the big fire," Joe, now 68, recalls. "There hadn't been any Monotype machines on the coast before. The men were afraid we were going to put them out of work."

As Joe tells the story there were seven compositors in the little shop where the machines were to be installed. The plant had three cylinder presses. One of the pressmen was George L. Berry, now president of the Pressman's union.

"Three months after we installed the machines they had 37 men working on the floor," Joe said. "Work that had been farmed out as far east as Chicago was kept right in the shop."

They never did dip Joe in the Bay. Maybe it was his 250 pound bulk, most of it muscle, which posed a problem for the seven Frisco printers. He didn't have time to find out.

In 10 years as a trouble shooter for the Lanston Monotype Machine Co., Joe never stayed very long in one place.

His travels have taken him to most of the best and in some of the worst printshops in the country. He has a circle of friends more expansive than a presidential candidate.

Cast Type in 47 States

He has cast type in 47 of the 48 states. Somehow he missed Florida, he says. Legends of his skill with the innards of a Mono machine have grown faster than he can cut them down. Some he will admit to.

There was the time in New York when Joe worked 20 straight hours clearing an airtube on a machine. A broken pencil point and an amateur machinist had caused the foul-up. The publisher had a mental squirt when he saw the bill. "Too much." he screamed.

"Call the factory," Joe advised.

The publisher did. He described the trouble in detail.

"How much does a repair job like that ordinarily cost?" he demanded.

"How much does it cost?" came a puzzled reply, "A job like that is impossible."

Back in 1893 Joe was an ambitious lad of 12 when he came to Chicago from Weiser, Idaho, to see the World's Fair. He got a job as printer's devil at the James L. Regan printing house.

"I worked a 66-hour week for a dollar and seventy-five cents. In those days you learned to do everything. The thing I did best was sweeping the floor."

Rushed the Growler

ANOTHER important phase of Joe's first job was what was known as rushing the growler. Twice a day he would journey down to the nearest saloon, eight tin beer pails dangling from his notched broomsticks. For this ignoble chore the boys in the shop paid him ten cents a week.

It wasn't long before Joe, the country boy, developed this enterprise into a profitable sideline. On each trip he would have the barkeep fill just six of the cans, brimfull. Once outside the swinging doors Joe filled the two empties from the well-filled six. His weekly take jumped to $1.30. The city slicker printers never did catch on.

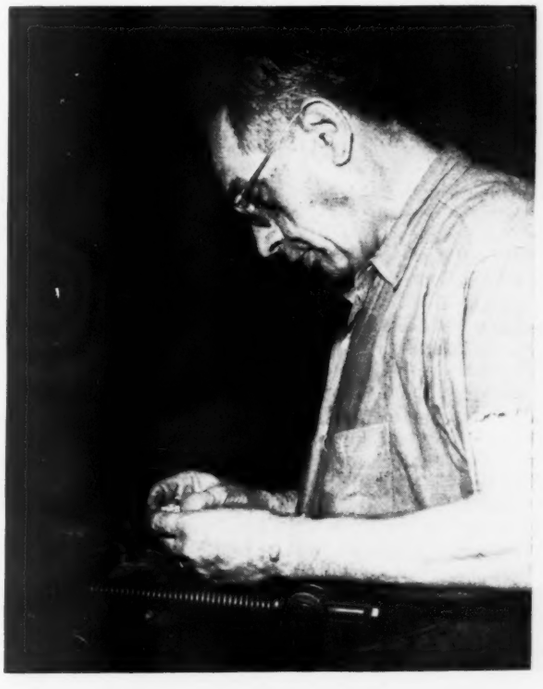
Joe Lilly was a young printer in New York when the nine-hour strike came along. A strong union man, he didn't relish a strike but picket lines were sacred. Then, too, he had become fascinated with the typecasting machines in the shop.

Trains at Monotype School

"I want to be a caster man," he told his foreman. They sent Joe to Philadelphia for training at the Lanston Monotype school. For the next six months Joe paid his room, board, laundry and recreation from a $7.50 weekly pay envelope.

Joe was an adept pupil; his love of fine printing was in perfect register with an

(*Continued Next Page*)



Veteran typesetter, Joe Lilly checks a seven-line figure as it comes off a casting machine at the Dayton (O.) *Daily News*. It is related that electrotypes were used for all figures over 72 pt. before Joe showed them how it could be done on a machine.

instinctive machine sense. He stayed on the Monotype payroll for the following ten years.

His contribution was more than pure mechanical skill. He played a major role in presenting the company with a president. It happened this way:

Role of Teacher

While working with the Con P. Curran Co. in St. Louis in 1910, Joe began training a new helper, a grocery store delivery boy. The new assistant was smart; Joe taught him well.

Later the former grocer's helper went to Montreal as Canadian representative for Monotype and was subsequently recalled to the Philadelphia office. Before his untimely death a few years ago, Joe's former runner, John Meadth, became vice president and then president of the company.

"He was a good combination man. He did a good job in the caster room or on the keyboard." To Joe there is no higher compliment.

Works for Goud

FOR several years in his career Joe worked closely with the greatest of American type designers—Frederic William Goudy.

"He was one of the finest men you ever met," Joe says. "Besides being an artist he was one of the best printers in the country."

Joe spent considerable time in Goudy's shop at Marlborough-on-Hudson, New York, from 1925 to 1930. From Goudy, Joe says, he learned a fuller appreciation of the beauty of fine type faces.

Joe is quick to explain that he had nothing to do with designing type faces. His job was to work out wedge positions for each letter. The wedge position of the caster machine determines the width and body size of the letter.

"Goudy made his original letter designs about a foot high," Joe relates. "Next he would make his own master matrices, scaling down by steps until he got the proper size. The master matrices were used in cutting the brass matrices. Goudy was remarkably patient. He had only one eye, you know."

Tries Ranch Life

Along about 1933 Joe decided to spend a little time on his 1300 acre ranch near Tucson, Ariz. He and the Missus stayed for over a year.

Joe was no slouch with a lariat and branding iron. After years of coaxing stubborn machines, balky western cow ponies gave him little trouble. After looking at Joe's bulk, however, the horses might have had some doubts about who was to carry who.

Country life wasn't all it was cracked up to be.

"It was so quiet at night I could hear caster machines going all over the country. I never knew you could miss a noise so much," Joe says.

Ranch life ended with a call from Bill Weatherly, then manager of the San Francisco office of the Monotype company. The San Francisco *Chronicle* needed an expert hand in the caster room. Would Joe help out? Joe guessed he would. He wasn't ready to retire—quite.

Last Stop Before Pasture

Late in 1935 Joe came to the Dayton *Daily News*. He has been here ever since. He claims it is his last stop before turning himself out for pasture.

Joe has no regrets for a lifetime spent at the printing trade. He might have passed up a few golden opportunities, he admits. For example there was that retailer in Chicago who asked Joe to work for him.

"It didn't look very promising," says Joe. "Just three people in a tiny office. The man's name was Roebuck. That's where Sears Roebuck got started."

Composing Machine Mortality

A HALF-CENTURY with an assortment of casting machines is enough for any man, Joe claims. There was the Thorn, Compositype, Thompson, Universal and a half-dozen others that never got further than one model.

"Most of these machines have come and gone," Joe says. "Only the Monotype machines are still with us and I still learn something new about them every day."

Perhaps that's part of Joe's success as a skilled worker—he is never content to know just the job at hand. He wants to know what happened before it came to him and what'll happen after his part in it is finished.

"You got to know what goes on in every department in the plant," he says. "Sometimes the little bit you know and the little bit the other fellow knows can solve some mighty big problems."

If Joe is sure of one thing it is that no one has fully realized all the possibilities of caster machines—not even himself. But if you should walk into his department and find Joe turning out printed newspapers instead of type don't be too surprised.

If anyone could do that on a caster Joe Lilly is the man.

Printing Industry Foremanship Training

COMMENCING on June 13, the Department of Publishing and Printing at Rochester Institute of Technology will open a two week intensified foremanship training course for the printing industry.

Dominating the course will be an intensive study of the duties and problems of foremanship in the printing industry. Emphasis will be placed upon the application of this type of training in composing rooms of printing plants and commercial composition houses. The broad purpose of the program will be to provide a comprehensive understanding of the duties, responsibilities and techniques of foremanship and to assist in building up improved supervisory practices in the industry.

Areas of study will include human relations in effective foremanship, personal development of the foreman, fundamental economics, studies of foremanship activities and responsibilities, and the application of engineering principles in composing room management. Conference and discussion leaders will include national figures who are prominent in the various phases included in the program.

One session each day will be devoted to the human relations aspects of foremanship. The remaining three sessions each day will be devoted to composing room layout, determination of job costs, inventories and purchasing, production standards, production planning and control, quality control, how to make a technical study, how to write a report and how to conduct a conference.

The training course will be opened by Frank M. Sherman, Executive Secretary of the ITCA, who will explain the purposes, organization and expected benefits of the sessions.

An economic background will be provided with a session devoted to explanation of the profit system, financial structure of business, corporations, production costs, etc. The responsibilities of management and labor will be considered at another session.

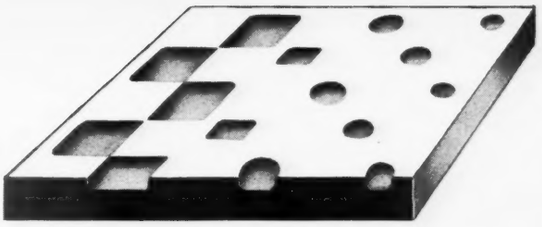
Self-appraisal and the rights and duties of the foreman will be discussed to stress the need for better handling of employees and for initiating and/or carrying out improved methods and procedures. The functions of supervision and administration will be explained, as well as the foreman's relations with management and workers.

Another session of the course will deal with the psychology of promoting good working conditions for the benefit of employees to obtain increased production. Incentives will form a discussion topic in addition to the principles of teaching others a particular operation.

Tuition for the course, which will be concluded on June 24, is $100. Inquiries should be addressed to Alfred L. Davis, Associate Director, Evening and Extension Division, Rochester Institute of Technology, Rochester 8, N. Y.

SMICO Opens Plant

The Sleight Metallic Ink Co. announces the opening of a newly enlarged manufacturing plant at 480 Canal St., New York 13, N. Y. The New York plant is manufacturing all types of letterpress and lithographic inks.



Greatly enlarged cross-sectional and perspective view (not to scale) of part of a rotogravure printing plate produced by the Intaprint process. It will be seen that in the Intaprint process the dots are all of approximately the same depth but vary in size. Thus, in the printed result, the gradations of tone are produced by areas of varying size arranged so there are small pin-point dots in the highlights and large and merging dots in the shadow portions as in letter-press and offset printing.

Intaprint Process

(EDITOR'S NOTE: Printing Equipment Engineer *has published a series of comprehensive articles by well known authorities about the gravure process during the past year. In this, the ninth of the series, is a brief but elementary explanation of the Intaprint process.*)

IX.

THE Intaprint process is a special method for making gravure printing plates. The process was conceived by W. J. Wilkinson and introduced by the Miehle Printing Press & Mfg. Co. in conjunction with its single and multi-color sheet-fed gravure presses. The printing design is etched in a thin copper plate which is wrapped around the plate cylinder of the press. Up to the present, the Intaprint platemaking and gravure printing process has been used for producing advertising folders, book inserts, greeting cards, labels, cartons and other work in single and multi-color jobs.

In the Intaprint process, the printing wells or dots in the plate, instead of being constant in size and varying in depth as in conventional gravure, are of substantially constant depth but vary in size. Average depth measurement of the wells, varies very little from shadow to highlight and is of the order of about 0.0011 in. for the shadows and —.0010 in. for the highlights. The average plate may vary somewhat in practice. However, the average can be taken in agreement with the figures given. In the printed matter the tone gradations are produced by areas of varying size, arranged so there are pin-point dots in the highlights and large and merging dots in the shadow portions of the picture as in letterpress or offset printing.

The initial platemaking operations are somewhat like those employed in deep-etch offset. In the camera room, continuous-tone negatives are made of the various subjects or copy. From these negatives, positives of special type are made through a photoengravers' half-tone screen.

A thin copper press plate (0.023 in. thick) is coated in a whirler with a light-sensitive solution. The screened positives are then printed down on the sensitized plate, either from a stripped-up form or by use of a photo-composing machine, similarly to the methods used in photo-engraving and offset platemaking. When the exposed metal press plate is developed, the hardened coating forms a stencil protecting the non-design areas, with the printing dots showing through as clear copper.

The plate is etched by a process which is similar to photoengraving. Basically, the plate is immersed in a single strength perchloride of iron bath for a flat etch. As compared to photoengraving, very little staging and re-etching are necessary.

The finished Intaprint plate is wrapped around the plate cylinder in the press. The gap in the printing cylinder where the plate is fastened at either end is closed in with a filler piece or bridge. Thus a continuous area is provided on the cylinder upon which the doctor blade oscillates to wipe ink from the non-printing areas of the plate.

Special attention has been given to the manner in which the doctor blade is supported when the gap passes underneath the blade. This is accomplished by building into the edges of the gap cover and leading and trailing edges of the cylinder respectively, a curved shape having a relatively large radii. Thus the edge of the blade, when dropping into this recess will do so gradually and not with a sudden flipping motion. In other words, the edge of the blade rides the curved portion somewhat as if the curved portion were cam-shaped. In addition to this curved path, the amount of drop permitted is governed by set stops.

While *Printing Equipment Engineer* printed a brief description of the Miehle No. 44 sheet-fed gravure printing press some time ago, we will reprint some of that information inasmuch as the Intaprint process and the press are closely related. Maximum sheet size is 29 in. by 43 in.; minimum sheet size is 16 in. by 19 in.; maximum design surface is 28½ in. by 42 in. Speed range is from 3000 to 6000 i.p.h. Design of the press is based upon the unit principle to permit installation of a single or multi-color press or installation of additional units at a later date. Hot air drying equipment is provided. In the delivery conveyor of the press is incorporated additional drying means to supplement the drying action resulting from long sheet travel from printing cylinder to delivery pile. Press is supplied with automatic sheet feeder.

Newspaper Stereotype Mats Are Packed Automatically

CHARLES FRITSCHI of Stereotex Machinery Co. has announced development of a means for automatically packing the space levels in stereotype mats. The method has been designed especially for use with the Stereotex Hydraulic Direct Pressure Matrix Press. Mr. Fritschi states, however, that all 900 T. Stereotex Matrix Presses now in the field are designed for this molding and packing method.

It is explained that in the method of automatically packing stereotype mats, it is unnecessary to mold the non-printing spaces or areas to the usual depth as with hand packing. A depth of approx. 0.040 in. is more than ample. Bolsters are square and have no tendency to flatten out irrespective of the number of plates cast from the mat.

In appearance, a molded and dried stereotype mat with the automatic packing applied resembles a two-layer mat. The top layer, of course, is the casting mat itself and looks like any standard molded mat. Attached to it by adhesive is the automatic backing applied in all-over form. The backing in the corresponding open (non-printing areas) carries embossed buttons (approx. 3/16 in. diam., spaced approx. 1/8 in. apart), which when dried become hard and form support for the space levels in the stereotype mat to which it is attached. (See accompanying illustration.)

As has just been intimated, the backing paper (packing) provides considerable additional strength to the mat, which is claimed to be advantageous when a large number of plates must be cast from the molded mat.

The mat itself, before molding, should be of about 0.020 in. thickness, but a mat thickness up to about 0.024 in. will also give satisfactory results.

The thickness of the backing paper is 0.016 in. Mr. Fritschi states he can obtain equally good results with a thinner gauge paper. The backing paper moisture content may range from 16% to 20% depending upon the shrinkage required by individual newspapers and will be supplied to produce exactly the same shrinkage as the mat used.

The surface of one side of the backing paper is coated with a special adhesive which becomes tacky and provides a firm bond during the packing cycle. The bond increases during the subsequent drying operation but does not become brittle so as to impair the flexibility of the mat. The backing paper is fabricated of wood pulp and carries characteristics similar to a newspaper mat.

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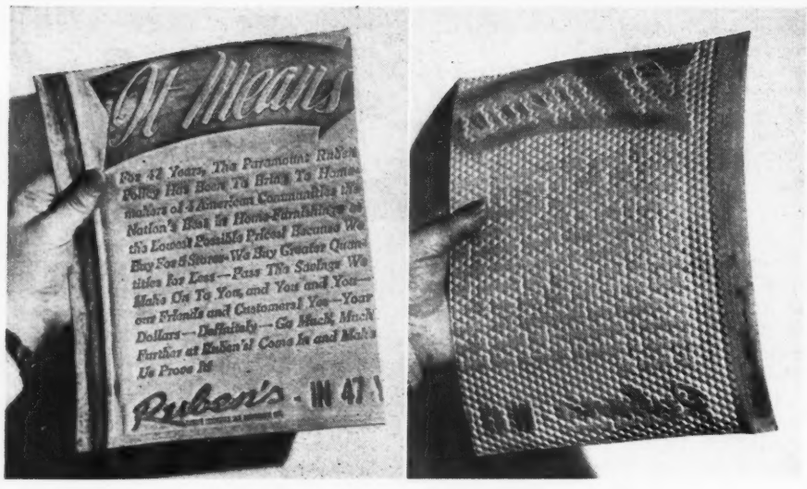


At left is shown a quarter-page section cut from the casting face of a molded stereotype matrix in regular run of work on a daily newspaper.

At right is shown reverse side of the same section of the stereotype mat. This mat was packed automatically by the Stereotex Mat Packing method. After molding and packing, the mat consists of two layers. The embossed buttons provide support for the space levels (non-printing areas) when a plate is cast from the mat.

It is pointed out that no heat is required in the Stereotex press for the molding and backing operation. The newspaper plants now bumping the mat are heating the type form and keep the mat under pressure long enough to make it adhere to the form to permit bumping the mat without risk of a double impression. The same objective is achieved with the Stereotex method without loss of time or quality of reproduction by means of an under-etched halftone screen on top of the steel bearers around the type form, thus firmly anchoring the mat and preventing any shifting or raising of the mat.

It is also stated that with the automatic backing method the relief in the face of halftones in the mat is fully maintained in the stereotype plates cast from them. It is unnecessary to bump the original plates because the halftones become bumped in the mat by the molding operation. In other words, the interlay for the back of the original halftones is attached to the plate by the engraver and no extra work is involved by the stereotyper.

In explaining the actual mat molding and automatic mat packing operation, the operation is accomplished on the Stereotex direct pressure press in two predetermined and successive pressure cycles—one with and one without blankets. The second cycle packs the mat and applies pressure to solids, halftones and large type and thus molds these areas to the same thickness as the small type, rules and line cuts in the mat.

The molding cycle of the Stereotex Hydraulic Direct Pressure Press is of 10 sec. duration. From 6 sec. to 7 sec. are required to build up and 3 sec. are required to hold the predetermined tonnage.

The mat packing cycle, at a somewhat lower pressure can be accomplished in 10 sec.—from 5 sec. to 6 sec. to build up and 4 sec. to hold the pre-determined pressure.

The interval of about 7 sec. between the molding and packing cycles is used to remove the blankets and place the Stereotex packing paper on the back of the molded matrix adhering to the form without withdrawing the form from the press.

Mr. Fritschi explains that the packing cycle automatically packs the back of the mat by bonding the Stereotex packing paper to the matrix and by equalizing and correcting the mat thickness obtained by the molding operation. A flat back is produced by filling in non-printing spaces, irrespective of size, with precise bolsters and adequate resistance to pressure over the entire area of the mat. The matrix so produced is slightly thicker than the conventional type of mat and can be made to meet any normal shrinkage requirements.

It is claimed that one man operating a Stereotex Press performs in 17 sec. flat what under the old system might take two men as long as 20 min., dependent, of course, upon the character of the type form.

Mr. Fritschi points out that since Stereotex direct pressure presses are equipped with automatic timing controls, the right length of time produces consistent results with the mat molding and mat molding operations. On those presses not equipped with these controls, it is stated that with reasonable care on the part of the operator, satisfactory results can be obtained with the automatic backing process.

Patent application for the process just recently has been completed. Mr. Fritschi mentioned that Dorando Melegari, Stereotype Foreman of the McKeesport (Pa.) *Daily News*, has been very helpful to him in developing the process. The packing paper will soon be available in commercial quantities. Bulletin No. 50 in which the backing paper is described is available. Please send your request for a copy to Stereotex Machinery Co. direct or in care of *Printing Equipment Engineer*.

Linotype Molds and Spacebands Treated by Linolizing Process Kept Free of Metal Adhesions

MERGENTHALER Linotype Co. has just announced a new processing technique known as Linolizing for the prevention of metal adhesion on certain critical Linotype machine parts. Metal adhesion has long been a major composing room headache. Build-up of metal on molds and spacebands has absorbed much maintenance time. Adhesion on molds resulted in slug damage because of hard ejection. Matrices have been ruined because of a breaking down of the bridge between characters. On spacebands, metal build-up at the casting point frequently crushed the thin side walls. The objections to occasional backsquirts because of metal adhesion require no comment.

The company summarizes the results of its developmental and testing work as follows:

Extensive laboratory and field tests conducted by Linotype have shown that Linolized molds and spacebands are not susceptible to this kind of type metal adhesion. Resultant difficulties are eliminated.

What Linolizing Is

In its simplest terms, Linolizing involves the substitution of a desirable alloy for an undesirable. A hard, dense coating of microscopic thickness is applied to the base metal and becomes merged with it. A surface hardness 20% greater than that of high speed steel is obtained. This non-wettable layer between type metal and base metal prevents any further alloying. A "safety zone" is created.

No Substitute for Proper Care

Despite the effectiveness of the Linolizing process in eliminating metal adhesion, it must be emphasized that it is no magic panacea. A composing machine cannot work properly unless it is maintained in proper order. For example, field tests of Linolized molds showed several cases of hard ejection of slugs which were traced not to the Linolizing, but to failure to make proper mechanical adjustments. Linolizing is not a substitute for proper over-all care of the machine.

Similarly, Linolized surfaces are vulnerable to abusive treatment just as is

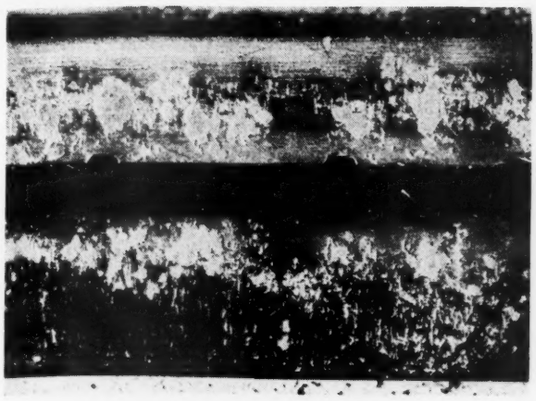


Fig. 1.—This illustration made from photo of regular Linotype mold which was in operation for 8 hrs. Metal adhesions on mold face are visible.

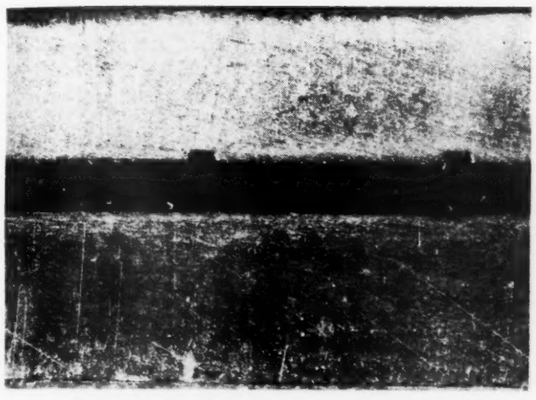


Fig. 2.—Linolized mold in operation in the same plant as the mold shown in Fig. 1. This mold in operation approx. two months. Mold wiped daily with soft cloth.

any other metal surface. Abrasives, such as mold polish, will eventually remove the coating. Mishandling resulting in nicking should be avoided. Linolized molds require no particular care if they are wiped while warm with a soft, clean cloth. Spaceband slides demand no greater care. Graphiting of spacebands is permissible to assure proper lubrication but should not be overdone. Frequent examination should be made to assure that no graphite build-up occurs. Linolized spacebands are just as susceptible to this phenomenon as ordinary spacebands. Although easily removable and non-metallic in character, graphite build-up may eventually damage matrix side walls.

The Adhesion Problem

The Mergenthaler Laboratories investigated other techniques in an attempt to cure type metal build-up. Stainless steel worked well but its heat conductivity was too low and molds tended to run too hot. Nitriding was tested; and, while metal build-up was minimized, production methods made it impracticable. Chromium plating failed to eliminate build-up and spalling resulted on square mold edges.

Laboratory Testing

Results of laboratory testing were interesting. For example, a Linotype Universal Adjustable Mold, F-1407, drawn from new stock was Linolized and subjected to a severe test on a Model 30 Linotype. The machine was operated at top speed until 800 full-length 14 pt. slugs had been cast.

When hollow slugs resulted in backsquirts, the machine was stopped until the mold cooled down.

The Linolized mold did not show any of the characteristic annealing discolorations of an untreated mold. The operating surfaces retained their hardness whereas the surface of a normal mold subjected to this treatment would soften. Metal would be picked up and hard ejection would result. It is reported that no adhesion occurred in the case of the Linolized mold. Any metal which stuck to the back of the mold was easily wiped off while the mold was hot.

Mergenthaler states its laboratory testing techniques have been improved since the above test was made and more impressive results have been attained.

Field Testing

Linolized molds and spacebands were placed on Linotype machines in customers' composing rooms first in the New York, N. Y., area and later throughout the entire country. A total of 20 plants, both trade and newspaper, participated in these extended field tests covering both molds and spacebands.

Of these, five molds were not fully satisfactory but the difficulty in four cases was traced to a failure on the part of the plant machinist to regulate mouthpiece temperature properly and to adjust the back mold wiper. One mold was unsatisfactory and is yet unexplained. In addition to the above tests on new molds, a number of used molds which had been causing hard ejection were Linolized. The process eliminated this difficulty in all cases but one. In that instance, the difficulty was not caused by metal adhesion.

All sets of Linolized spacebands concerned in these tests were free of adhesion.

It is stated that satisfactory results of laboratory and field tests of Linolized molds and spacebands slides have led to a decision to supply them as standard equipment on all new Linotype machines. In addition, Linolized molds and slides are now available to users of existing Linotype machines. Facilities have also been set up for the Linolizing of used Linotype spaceband slides and molds.

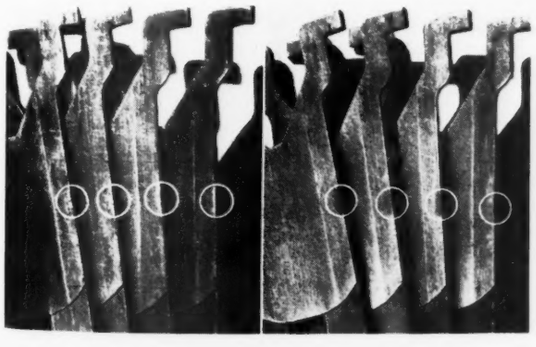


Fig. 3.—(at left): Four regular spacebands after being run for 8 hrs. Metal adhesions cling to spaceband sleeves at casting point.

Fig. 4.—(at right): Four Linolized spacebands which have been run over 2 mo. without cleaning.

Huber Expands Offices

The New York offices of J. M. Huber Corp. have been expanded to include the office of the director of purchases and the finance and accounting departments of the corporation, formerly located at the Brooklyn plant. Moving to New York are Treasurer R. J. Cashion and his assistants, and Director of Purchases, E. M. Krech. Purchasing office of the ink division will remain in Brooklyn under the direction of Charles Cubbison.

Distribution of a $600,000 bonus among employees of the J. M. Huber Corp. was completed recently according to an announcement by H. W. Huber, President of the firm. As part of the Huber bonus and profit sharing plan, the company has deposited approx. $170,000 into its salaried employees' profit-sharing trust fund. This augments the cash bonuses being paid to all salaried employees with the company six months or longer.

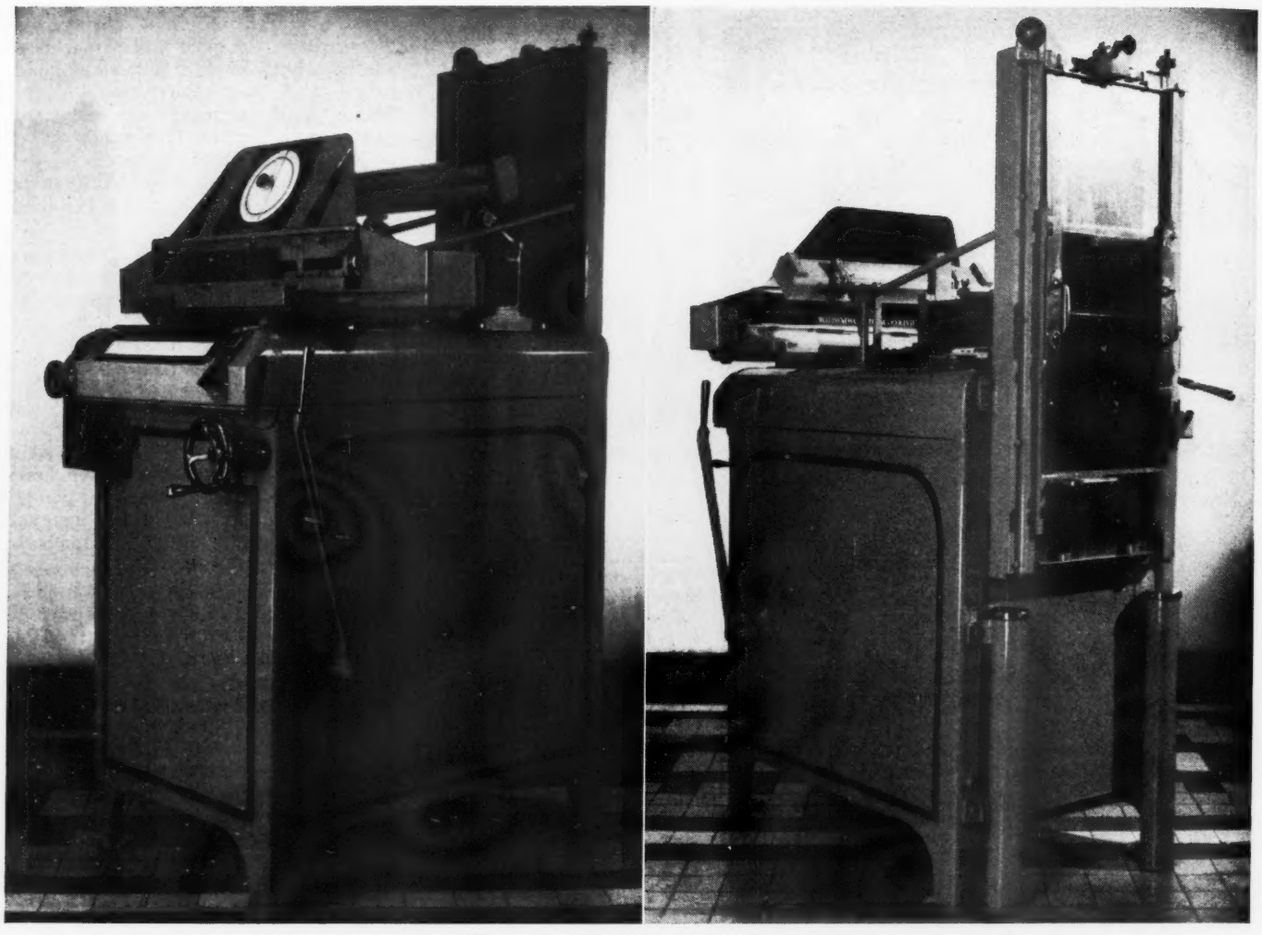


Fig. 1.—Two-dimensional front and rear views of the Hadego Photocompositor. Machine operates upon principle of Ludlow and APL hot-metal composing machines. In the view at left, the camera, stick-holder, lighting, proportional calculating and film holder mechanisms are mounted on top of the cabinet. Product of machine may consist of negative or positive film or negative or positive prints on photo paper may be made from the film. Principal use is for setting display type for offset or gravure reproduction. Various parts of the machine are identified as follows: The 140 pica stick containing the plastic matrices is mounted under the round dial and before the camera "bellows." The fluorescent lighting tubes extend horizontally between the round dial and the film holder at the back of the machine. The round dial is the calculating disk to determine position of the lens for point size of the type on film. The rectangular scale at front of the machine is graduated so that when a needle in front of the scale is moved right or left by the hand wheel at front of the machine, the needle must correspond to the proportional figure obtained on the round calculating dial. This setting provides focus (proper point size) of the letter characters by moving the lens in proper relationship with the matrix line and the film. At extreme left is the Time-O-Lite instrument or timer for regulating the length of exposure of the matrix line to the sensitized film.

In the view at the right is shown the film holder (open), the hood for the fluorescent lamp tubes, and the image side of the matrix line in the stick. When in this position, the line reads from right to left and the letters are inverted.

Hadego Photocompositor for Display Work

By G. M. VAN WAGTENDONK*

**Amsterdam, Holland.*

THE introduction of the Hadego typesetting machine, the invention of Dr. Ir. H.J.A. de Goey, Haarlem, Netherlands, is designed especially for offset and gravure display type composition.

The product of the machine may be either positive or negative transparencies or positive or negative photo prints for pasting on a layout may be reproduced from them. It is said that the type reproductions in film form are sharp and are faithfully reproduced from the pattern "matrices". One set of matrices (48 pt. size) may be used to obtain reductions or enlargements of the type characters in any point size varying from 19 pt. to 115 pt.

Operation of the Hadego photocompositor may be compared in principle to Ludlow and APL hot-metal machines.

The Hadego machine has been in practical printing plant production use for a year in one of the greatest Netherlands printing plants, Drukkerij De Spaarnestad, Haarlem. Most of the headline work as well as an important part of the display work is produced on this machine for the gravure printing department.

In contrast with other known phototypesetting machines like Intertype's Fotosetter and George Westover's Rotofoto, (illustrated and described in the February issue of *Printing Equipment Engineer*), the Hadego machine is a photosetter for display work. The machine also may be used as a step-and-repeat machine, while it offers the possibility of setting music notes. The machine photographs the entire matrix line with one exposure. A solenoid shutter is used. The diaphragm may be changed but its adjustment is dependent upon the kind of film used. Normally it is 1:16. The lens is specially designed and is distortion-free reproduction type. Focal length is about 183 mm. (7.2 in.).

The two main features of the Hadego photographic display typesetter are the use of plastic matrices (Fig. 3) to be col-

Fig. 2.—View of "matrix" line assembled in stick ready for photographing in the Hadego Photocompositor. Capacity of stick is 140 picas.

lected as a sentence or single words in a special composing stick (Fig. 2) and that part of the machine, in which the desired sentence or words are reduced or enlarged photographically.

The matrices are made in 48 pt. size and may be reduced to 19 pts. or enlarged to 115 pts. When a smaller character size is necessary, smaller matrices may be made. For example, 20 pt. matrices may be reduced to 4 pt. and enlarged to 36 pt.

The matrices are made of plastic material on which the image is affixed in a chemical way. By this system the image, it is claimed, will not disappear through handling. The matrices may be supplied either in negative or positive form. If necessary, a reversal development of the film may be used. Matrices are stored in a cabinet with slanting drawers and are assembled in a stick in a manner similar to the hot-metal Ludlow matrices.

For composing headlines for magazine printing or display work the matrices are assembled in a composing stick. After assembling the matrix line in the composing stick it is measured for length. On a calculating disk (Fig. 1, left picture) the figure representing the length of type line is brought into position with the figure of the desired length of the line on the stationary disk scale. The figure that is found by turning the calculating disk is the key for positioning the lens of the photographic part of the Hadego machine.

In Fig. 1 (left picture) a rectangular scale is shown on which a needle may be moved to and fro by means of a hand wheel at the right of the scale. The needle on this dial must coincide with the same figure on the calculating disk. The lens is focused automatically in relation to its proper position between the matrix line and the sensitized film.

After the stick containing the matrix line has been put in position before the camera lens (Fig. 1, left picture), the machine is ready for exposing the matrix line in the composing stick. For this purpose, the composing stick is illuminated by two fluorescent lamp tubes.

By means of a Time-O-Lite, the exposure takes place. The shutter closes automatically after the proper exposure has been made.

By a special arrangement of the fluorescent lamp tubes, it is not necessary to change the exposure time for different reductions or enlargements when using the same film. One long tube is secured underneath to the composing stick holder. The two short tubes are attached to the lens carriage in front of the lens and move with the carriage. The diaphragm of the lens is very small in order to secure utmost sharpness of the character image. This diaphragm cannot be altered. When the lens shutter closes, the lamps are automatically switched off.

A special construction of the moving mechanism of the film holder enables the operator to lead between the lines. The possibility of leading varies from 0 to 24 pts. Even negative leading may be obtained if desired. Also, by this system shadow characters may be produced on the film.

Interesting safety devices and warning signals are incorporated in the design of the machine to avoid operating mistakes. A green light indicates when the exposure may be made and assures that the slide of the film holder is open. Contrariwise, a red light warns when the film holder is not in the machine or the slide of the film holder is closed. An indicator shows the amount of film, that is non-exposed, when the film holder is in its place, while an orange light warns when the film has been exhausted.

The film holder (Fig. 1, right picture) may carry a film of 11½ in. by 16 in., which is fastened in the holder on sticky glass.

Sponsors of the Hadego machine state that its production is faster than hand composition and hand makeup.

In preparing a film for gravure reproduction, a screen is used between the lens and the sensitive film. This application offers interesting variations in characters.

It is said that the first Hadego Photocomposing machine arrived recently in the United States.

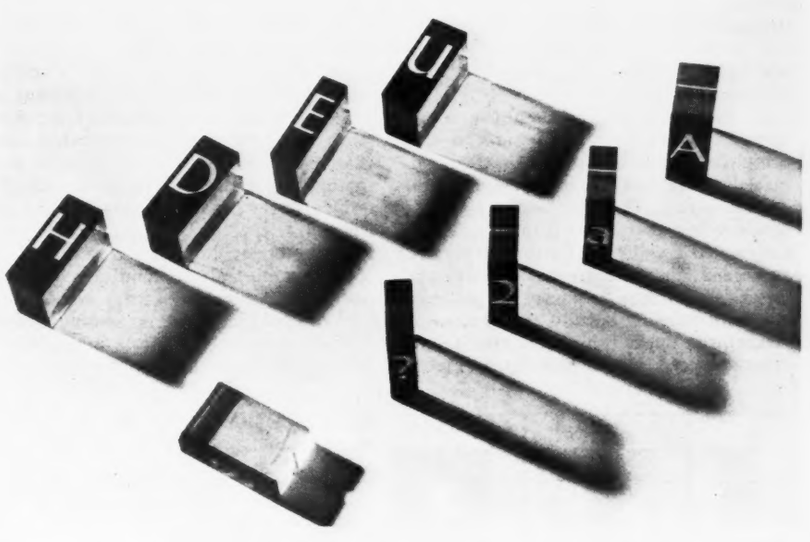


Fig. 3.—View of a number of Hadego Photocompositor "matrices." The rectangular blocks are plastic. The letter characters are affixed chemically—white on black background. Thus when assembled in the stick, the line is entirely surrounded by black background. Matrices are stored in a case with slanting drawers from which the operator gathers them when making up the line similarly to Ludlow and APL line composition. Letter characters are 48 pt. size and may be reduced to 20 pts. or enlarged to 115 pts. Matrix bodies measure 30 mm. (1 3/16 in.) high and 19 mm. (¾ in.) thick, by set width. A font consists of about 350 matrices.

Prevent Enamel Stock Sticking to the Tympan

THERE is often a tendency for enamel stock to stick to tympan paper on cylinder presses. William Skipper, pressman with the Kennickell Printing Co., Savannah, Ga., has frequently had this trouble both with cylinder and job presses. If a job being run on enamel stock begins to stick, Mr. Skipper stops the press and pasts Scotch tape on the tympan paper all around the outside of the form just beyond the printing surface. On practically every job there is sufficient margin around the job to make this possible. If white spaces run through a form, additional pieces of Scotch tape are pasted on the tympan paper where no printing surface touches. The job can then be run without fear of the enamel sticking to the tympan paper.

Varnishes Paper Cutter Bed

Paper cutter beds get dirty and in warm weather perspiration from the operator's hands often damages them. The handling of paper in the cutter is slowed up. William Skipper, pressman with the Kennickell Printing Co., Savannah, Ga., applies a thin coat of spar or bar varnish to the bed of the paper cutter in order to provide a slick working surface. It is put on at the end of a work week to permit thoroughly drying the varnish. Because the bed of the paper cutter is metal the varnish must dry from the outside in since there is no surface into which it can penetrate. This requires a bit more time for complete drying. But when applied at the beginning of a week end the varnish is dry by Monday morning. A single application will generally last for six months.

On the Effect of the Cylinder Covering on the Pressure Distribution in a Letterpress Form

By GÖSTA E. CARLSSON

Graphic Research Laboratory, Stockholm, Sweden

IN A previous bulletin[1] a short review of Letouzey's noted printing method was given. Its main principles are firstly, that extreme precision is necessary in every detail in the preparation of the forme and in the actual printing (a principle which is in no respect new), and, secondly, that the printing element must have different heights in reverse proportion to the printing density of each element[2].

The last-mentioned principle diverges totally from all previous theories and practices in regard to distribution of pressure and height of type, but seems strangely enough to have been accepted everywhere in the world, although no real evidence of its correctness has been presented.

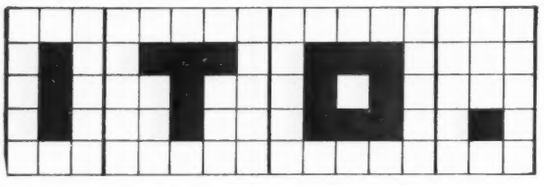
In the bulletin mentioned above, some doubts were expressed in regard to this principle, and it was stated that certain investigations were in progress in connection with it. These investigations have now confirmed that the principle of differentiated type height for the purpose of equalizing the pressure in a letterpress forme is incorrect. Letouzey has defined the term printing density as the ratio of the printing surface of a given type to the cross sectional area of the shank. Fig. 1 exemplifies how the printing density from various types is obtained.

In order to make the investigation of the problem less complicated certain simplifications have been necessary, which however do not essentially affect the validity of the conclusions arrived at.

Thus it has been assumed that the cylinder and the bed are completely rigid and not exposed to any variable elastic deformations during the printing process; that the distance between the cylinder and the bed is the same in all positions of the cylinder; and that the cylinder covering, unless otherwise stated, has the same thickness, hardness and elasticity at all points.

It is furthermore necessary to differentiate sharply between two different instances of the development of the pressure when printing in a cylinder press, namely when, firstly, the cylinder rests completely on the bearers, and, secondly, when the cylinder is raised from the forme. This latter is an abnormal state, and Letouzey himself stresses that the cylinder must on no condition be raised during the moment of impression[3].

We shall therefore also assume that the weight of the cylinder rests on the bearers during the moment of impression.



Printing density

3/15	5/25	8/25	1/15
20%	20%	32%	7%

Fig. 1.—Printing density of the characters I T O .

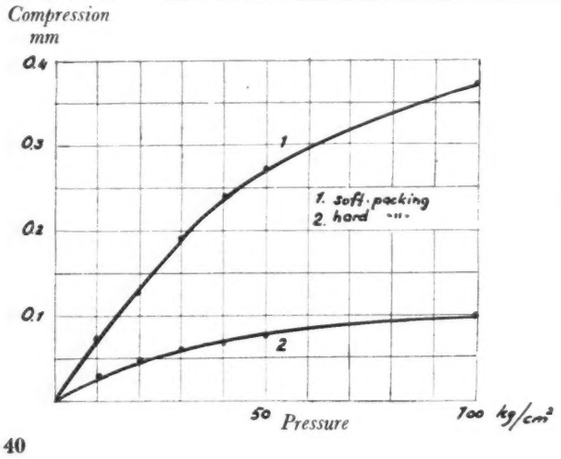


Fig. 2.—Compression curves for a hard and soft cylinder covering.

The pressure which the forme is subjected to during the printing is accordingly not primarily caused by the weight of the cylinder but by the compression of the cylinder covering.

In every type of cylinder covering there is a certain relation between compression and pressure. Fig. 2 shows compression graphs from a hard and a soft cylinder packing.

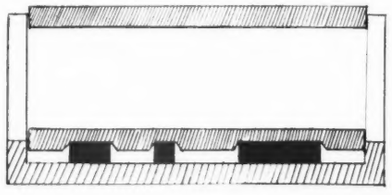


Fig. 3.—Sketch showing compression of the cylinder covering by the printing elements.

If all the parts in the printing forme have the same height, the several parts will naturally cause compressions of equal depth in the cylinder covering, and it follows that the specific pressure in the cylinder covering resulting herefrom will be of the same magnitude. If we look at Fig. 3, the internal pressure per unit of area in the cylinder covering is thus of the same magnitude in all the compressed zones, and if the compressed zones of the cylinder covering have the same area as the printing elements which have caused the compression, the pressure per area unit will also be the same on them all.

But practical experience shows the reverse of this. It is always more difficult to obtain good impressions from large solid surfaces than from types, and the pressure must therefore be less in the solids. The explanation of this must be that the cylinder covering is not a material with ideal elasticity. That part of the cylinder covering which is compressed is for this reason greater than the contact area of the printing element and therefore Fig. 3 does not portray the situation quite correctly.

Fig. 4a shows schematically how the cylinder covering instead is compressed by two elements of the lengths of *b* and *2b*. Because of the rigidity of the cylinder covering, the compressed zone then becomes greater than the contact area. The smaller the contact area, the greater the area of the compressed zone in relation to it. In the case of large solids however,

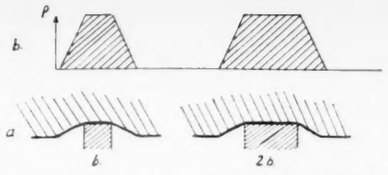


Fig. 4.—The compression of the cylinder covering by two printing elements of different length.

the compressed part of the cylinder covering outside the contact area, becomes insignificant in comparison with the entire area of the compressed zone.

In the compressed parts of the cylinder covering, compressive stresses develop whose distribution in the section where the pressure is maximal (that is to say, a plane through the line of pressure perpendicular to the bed) is schematically given in Fig. 4. These compressive stresses must be absorbed by the printing elements in the forme; accordingly, elements of small width are exposed to greater specific pressure than elements of greater width ("width" in this connection meaning the extension of the element parallelly to the cylinder axis).

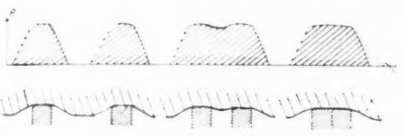


Fig. 5.—The compression of the cylinder covering by printing elements of the same width at different mutual distances.

This explains why poorer impressions are had from large solids.

It is, however, not only the area of the printing element which determines the size of the specific pressure. The distance between the elements also affects this greatly. This is seen in Fig. 5, which shows schematically how the cylinder covering is compressed by two types at varying distances from each other.

From the different distributions of pressure in the cylinder covering here indicated it is seen that the specific pressure which the printing elements are exposed to is increased when these are so close to each other that the cylinder covering, by reason of its rigidity, is compressed also between the elements. At a given distance between them the specific pressure reaches a maximum, again diminishing when the distance is decreased. When the type elements adjoin each other the specific pressure is less than when they were placed far apart.

This explains the well known fact that a greater pressure always develops in printing a dotted line than in printing isolated dots or solid lines.

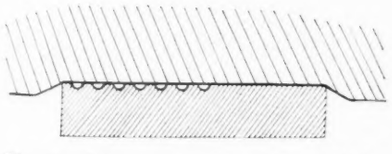


Fig. 6.—The compression of the cylinder covering by a halftone plate.

At the same time the reason for the difference between the impression of light and dark tones in halftone blocks is made clear. What takes place in this case is shown schematically in Fig. 6. The distance between the dots is so small that the cylinder covering is entirely compressed although the contact area is perhaps only 20 per cent of the solid area. The specific pressure becomes five times greater than that occurring in a solid surface.

Fig. 7.—Carbon prints of types at different mutual distances.

By reason of the rigidity of the cylinder covering, however, different specific pressures can develop in different parts of one and the same type. It is quite common that the serifs of certain types become deformed after a short time of use. That this is caused by greater pressure on the points in question has been shown by the following experiment:

By placing a sheet of carbon paper on the forme with the coated side up and on top of this a sheet of art paper and then making a print, an impression is had on the latter which gives a good idea of the pressure distribution on the various printing elements.

In Fig. 7 is shown a reproduction of several such impressions had from several types of exactly the same height and with varying distances from each other. No difference is discernible between the average impression of an O and a full point, and this simple experiment thus shows that the printing density of the types does not affect the pressure. A somewhat greater pressure occurs in all types if they are neared to each other, which is quite consistent with the above reasoning.

Most striking is, however, the great pressure in the serifs of the Os and the Is. The reason for this must be that the relation between the compressed zone of the cylinder covering and the printing surface in these sectors is in excess of the normal.

The above should make it fairly clear that the variations in the pressure occurring in a letterpress forme are in no way related to the printing density of the elements as defined by Letouzey, but are for a certain cylinder covering more the result of the absolute size and the distance from each other of the printing elements.

In ordinary text the pressure is of the same magnitude for all types. Abnormal differences in pressure appear in large solid surfaces which receive a too low pressure in relation to the types, and in very small printing elements at a certain distance from each other, as in dotted lines. The differences in pressure which develop in different sections of one and the same type, as for instance in serifs, are greater than the difference in pressure in different types of varying printing density.

To introduce, as Letouzey has suggested, varying heights in types of the same size in order to obtain a more even distribution of pressure would in reality have the opposite effect. Broadly speaking, the only instances when a height varying from normal type height should be used are in connection with elements with a large printing surface, such as shadow parts in halftone blocks, which should be higher than normal, and dotted lines or similar groupings, which should be lower than normal type height.

Exactly the same height in all types is, on the contrary, something to be aimed at. It would, however, be desirable if the height of certain serifs in large types were a little lower than the rest of the printing surface, something which perhaps could be accomplished by corresponding variations in the depth of the engraving in the matrices used for casting the type.

The following experiment shows the practical result if the height of a type with small printing density is made lower than normal type height. Carbon-paper im-

Fig. 8.—Printing elements (not to scale) used in printing experiment with varying height of the point character.

BLACKNESS CAUSED BY PRESSURE OF THE FULL POINT:

	Soft cylinder covering %	Hard cylinder covering %
Height of full point same as that of blocks	41	42
Height of full point 0,05 mm lower than blocks	17	14
Height of full point 0,10 mm lower than blocks	12	5
Height of full point 0,15 mm lower than blocks	8	2

pressions were made of the printing elements which are shown not to scale in Fig. 8—*i.e.*, two solid square blocks with 50 mm sides placed at a distance of 50 mm from each other, with a 36 pt. full point character halfway between them. The printing area of the period is only 4,5 mm² and its printing density thus considerably less than 1 per cent. In relation to the area of the shank it is 11 per cent. The height of the full point character was thereafter lowered by 0,05, 0,10 and 0,15 mm, while the height of the blocks was kept constant. The carbon-paper impression showed that the most even impression was obtained when the height of the full point and the blocks was the same. When the full point was 0,05 mm lower, the pressure on it was considerably less, and at 0,10 mm lower it was so slight that no satisfactory impression could be obtained. In this experiment a traditional cylinder-press covering was used with ordinary unglazed newsprint — in other words, a decidedly soft cylinder covering. When a cylinder covering of the same thickness but made up from glazed printing-paper was used, the reduction of the pressure on the full point was still more pronounced when its height was reduced. By photometric measuring of the blackness produced on the white paper by the pressure of the period on the carbon paper, it was possible to obtain a certain quantitative connection between the pressure on the full point character and its height, as shown in the table above.

By using a soft cylinder covering it is, then, possible to obtain an equalization of the differences in pressure which appear on printing elements of varying heights.

The differences in pressure which occur on printing elements of the same area but of different heights at a hard and a soft packing can easily be obtained from Fig. 1.

If, for instance, we assume that the proper impression of certain elements require a pressure of 25 kg–cm², the compression of the hard cylinder covering will be 0,055 mm as compared with 0,16 mm for the soft covering. If a printing element is 0,04 lower than normal height, the compression of the cylinder covering will, then, instead be 0,015 and 0,12 mm respectively, and in the diagram it can be seen that the corresponding pressures are 5 and 18,5 kg respectively. In the hard cylinder covering the difference in height consequently causes a lowering of the pressure of 80 per cent, and of 26 per cent in the soft cylinder covering. If one then, in order to effect a good impression of the lower surfaces, increases the compression of the cylinder covering—that is to say, increases the thickness of the whole cylinder covering—so that the pressure on the lower surfaces becomes 25 kg–cm², the compression of the cylinder coverings on the elements of normal height will be 0,095 and 0,20 respectively.

In this case the latter will be subjected to a pressure of 32 kg–cm² with the soft cylinder covering, while the compressive stress with the hard cylinder covering amounts to no less than 90 kg–cm².

This shows, then, that with printing elements of different heights it is much easier to equalize the pressure with a soft than with a hard cylinder covering, and furthermore that if the pressure is so adjusted by increasing the thickness of the cylinder covering that a satisfactory impression is obtained for the lowest elements the use of a hard cylinder covering results in an abnormally high pressure on the elements of greater height, with all the disadvantages this entails in regard to the quality of the printing, wear and tear of the forme, abnormal stresses on the printing press, and the development of plastic deformations in the cylinder covering.

It shows, furthermore, that in those cases when an equalization of the pressure is obtained by make-ready, the thickness of the make-ready must have a certain relation to the hardness of the cylinder covering so that the thickness of the over- or underlays is increased proportionally as the hardness of the cylinder covering is decreased.

These conditions apply to elements with equal printing areas. It is necessary also, however, to analyze such a case as when elements with unequal areas occur, and consequently the variable relation between the area of the compressed zone in the cylinder covering and the actual printing area influences the result.

For this purpose it is necessary to analyze the pressure upon printing elements of the same height but of varying area which arises at a given compression in cylinder coverings of different degrees of hardness.

Very great experimental difficulties appear when attempts are made to ascertain directly the pressure on the printing element as a function of the compression of the cylinder covering, but it is possible to obtain information on this matter by going partly in the opposite direction, that is to say, by measuring the compression at a given area of the element where the pressure is known.

In a previously described apparatus[4] for determining the hardness of the cylinder covering, three different cylinder coverings were subjected to compression tests at varying pressure, in which different compressing tools with areas of 0,05, 0,25 and 0,80 cm² were used.

The cylinder coverings tested were:

No. 1—hard cylinder covering for cylinder press, traditional type;

No. 2—hard cylinder covering for rotary press with alternating layers of rubber and fabric;

No. 3—soft cylinder covering for rotary press with surface layer of rubber but chiefly consisting of felt.

The thickness of the cylinder coverings varied from 1,9 to 2,3 mm, but the compression values given below have been adjusted so that they all apply to a thickness of the covering of 2 mm. The loads were changed for the different tools so that the pressure per cm² was kept at given values regardless of the printing surface.

The results obtained in these tests are seen in Table 1 below.

The results have also been worked out graphically. In Fig. 9 all the compression tracings have been recorded. These show, firstly, that in all the cylinder coverings the compression at a given pressure becomes greater when the printing area is increased. It is, furthermore, seen that the difference in compression in relation to different printing areas is different for the three cylinder coverings. This comes out clearer in Fig. 10, in which the compression at a pressure of 50 kg/cm² has been traced as a function of the printing area. The compression at the same pressure is accordingly seen as a function of the printing surface which, as it increases, asymptotically approaches a limit value. The explanation of the difference appearing in the compression is that the applied pressure energy is consumed, partly by the direct compression of the zone lying below the printing surface, and partly by the elastic deformation of the area nearest to the pressure zone. The reason for the compression reaching a limit value when the pressure area is increased is that the extent of the

Table 1.— Compression of different packings at varying pressure and at different areas of the Compressed zone.

Compressed area cm²	Packing nr	Pressure kg/cm² 10	20	30	40	50	100
		Compression in 0,01 mm					
0,05	1	1,5	2,5	3	4	4,5	8
	2	3	7	11	14	16	27
	3	6	11	15	19	20	32
0,25	1	3	5,5	7	9	10	15
	2	8	11,5	15	18	20	31
	3	10	14	22	27	32	48
0,80	1	4	7	9,5	11	12	17
	2	7	13	17	21	24	36
	3	19	28	36	42	47	64

deformative action outside of the pressure zone is nearly proportional to the borderline of the pressure surface, while the specific pressure action is proportional to the area of the pressure surface and accordingly increases with the square of the diameter of the pressure surface.

It seems, however, that great differences exist between the different cylinder coverings in regard to the inclinations of the tracings; in other words, the relation between the compression at different pressure surfaces and equal loads.

The relation between the compression at 0,8 and 0,5 cm² pressure surfaces at 50 kg/cm² compressive stress is for the three cylinder coverings:

$$\text{No. 1} \quad \frac{12}{4{,}5} = 2{,}7$$

$$\text{No. 2} \quad \frac{24}{16} = 1{,}5$$

$$\text{No. 3} \quad \frac{47}{23} = 2{,}0$$

The difference between the three packings in this respect seems, then, not to be a function of the hardness of the coverings. This difference between the cylinder coverings can be plainly seen in Fig. 11, which shows the pressure as a function of the printing area at constant compression.

This was what we originally intended to clear up, and these diagrams are especially interesting as they illustrate matters of vital importance to the letterpress process.

Here it can be seen how the size of the printing element affects the printing pressure in connection with different cylinder coverings, and it may be observed that a great difference obtains between the different cylinder coverings in this respect. When using cylinder covering No. 1, the difference in the pressure relating to different printing areas, below about 0,25 cm², is very great and increases very sharply with a diminishing printing area.

At the same time it can be observed that the difference in pressure appearing at different compression values in relation to a given printing area also is very great when cylinder covering No. 1 is used. In this case, then, very slight height variations in the forme cause great changes in the pressure.

Fig. 12.—Schematic outline of materials with different elastic properties.

The effect of the size of the printing area on the resulting pressure at a given compression is smallest when cylinder covering No. 2 is used; accordingly it is not the hardness of the cylinder covering which decides this effect.

There appears, furthermore, a great difference between the curves relating to the different cylinder coverings, on the one hand in regard to the total variations, on the other in regard to the size of the printing area where the inclination of the curves becomes more level—in other words, the size of area where the compression process reaches such proportions in relation to the deformation process in the surrounding zone that the latter ceases to be of much importance.

The science of the strength of materials gives information as to the various factors at work in this connection, and an analysis of the problem bears out what here has been stated, namely that it is not only the hardness of the cylinder covering or more correctly, its elasticity modulus which affects the relation between the compression process and the elastic deformation process, but that the shear modulus of the material has a decisive effect on this. The greater the shear modulus, the smaller becomes the area of the material lying outside the pressure zone being deformed. For a given elasticity modulus the material in the cylinder covering should have a large shear modulus and a large contraction modulus.*

In Fig. 12 four different cases are shown which may occur when a printing element under a given pressure, which is the same in each case, is impressed in different elastic materials. The elasticity and shear modulus are different in the four cases, as seen in the following:

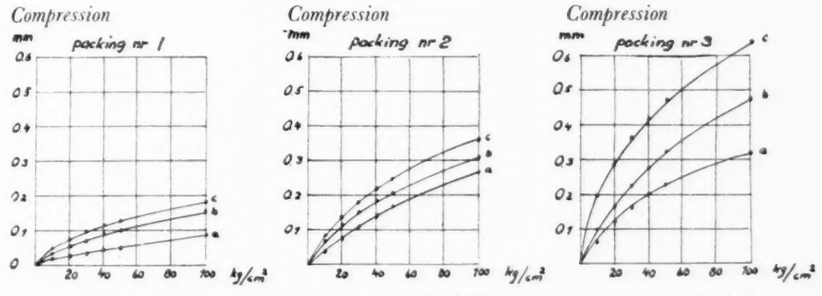


Fig. 9.—Compression curves of different packings at different areas of the printing element.

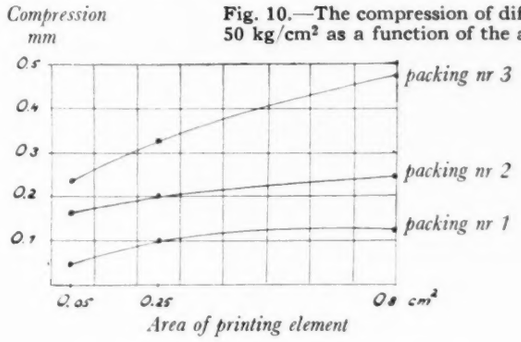


Fig. 10.—The compression of different packings at a pressure o 50 kg/cm² as a function of the area of the printing element.

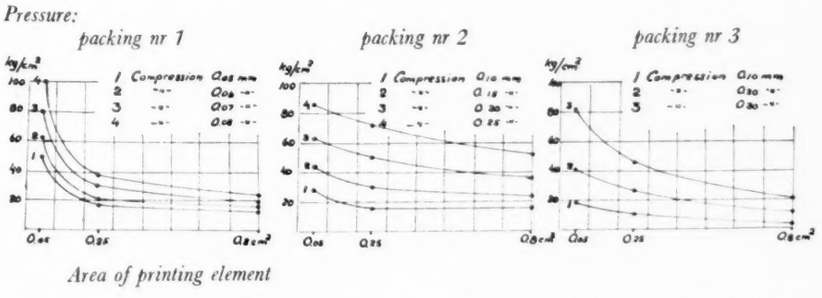


Fig. 11.—The pressure on a printing element as a function of its area at constant compression for different packings.

* Here the cylinder covering has been regarded as an elastic material to which Hooke's law applies, which is not quite correct, as ordinary cylinder covering materials should be regarded as elastoviscous materials. It has, however, been proved that Scott Blair-Coppen's special case of Nutting's law applies to rubber and similar materials, which consequently have no "yield value", and therefore Hooke's law can be applied if the time factor is eliminated, as can be safely done in this case.

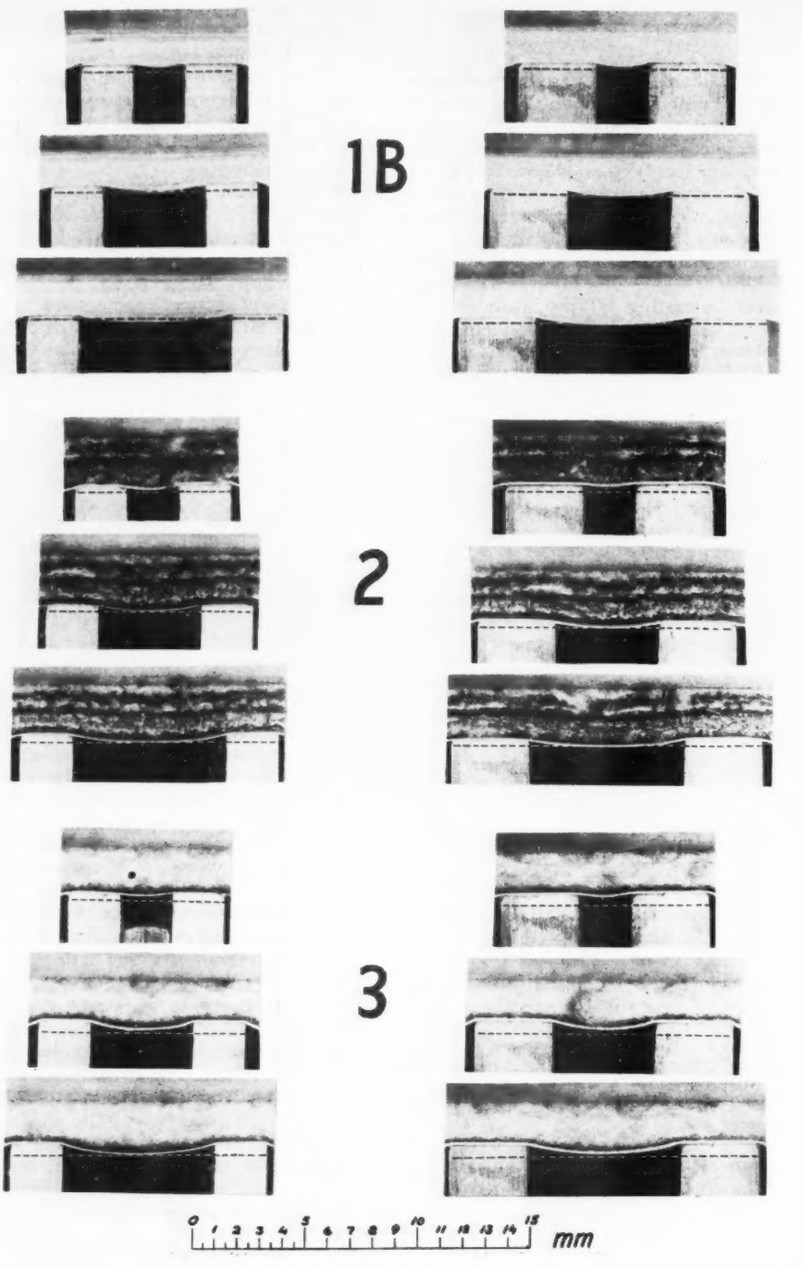


Fig. 13.—Photographs of the contact between different packings and printing elements at a printing pressure of 50 kg/cm².

Modulus Modulus
a. Low elasticity, low shear
b. Low elasticity, high shear
c. High elasticity, low shear
d. High elasticity, high shear
Case *b* and *d* accordingly corresponds to the ideal material for cylinder covering.

We have also photographed the contact between the cylinder covering and printing elements with three different types of cylinder coverings which were tested in the compression tests described above.

Printing elements of two different sizes were loaded at varying distances from each other so that the pressure on the printing surface of the element always amounted to 50 kg/cm². The contact between the elements and a sheet of printing paper and the cylinder covering was photographed and after enlarging, photographs of 11 times linear enlargement were had.

The total surface of the two printing elements was 102 respectively 148 mm² and the different distances between them 2,25, 4,50 and 6,75 mm.

On the enlarged photographs the compression of the cylinder coverings was measured at different points between the printing surfaces.

The photographs obtained are seen in Fig. 13. The enlargement is here about 2½ times the original. The line of dashes indicates the position of the surface of the cylinder covering when not compressed. It must however be noted that the paper covering here tested largely consists of unglazed paper and is therefore softer than cylinder covering No. 1 in the previous test. The two others are, however, the same coverings which were used in that test.

In Fig. 14 the compressions measured in the corresponding photographs have been drawn schematically, and the compression has here been reproduced on a scale which has been exaggerated in relation to the scale of the distance between the elements, which is five times smaller.

From the photographs and the drawings the same conclusions can on the whole be drawn as those from the previous tests. It can be seen among other things, that cylinder covering No. 2 adheres considerably better to the surface of the printing element than cylinder covering No. 3.

What could not be shown in the previous tests, however, was the difference in contraction pertaining to the different cylinder coverings, which can be studied here. Here it is seen that the paper covering, if the distance between the printing surface exceeds a certain value, swells out between the printing surfaces so that it becomes thicker than when not compressed. A similar occurrence, although much less pronounced, can be observed in cylinder covering No. 2. The compression of the paper covering, then, is not connected with a reduction of volume corresponding to it, but instead the cylinder covering strives to expand where there is no pressure. A displacement of material is consequently what occurs. The variance between the different cylinder coverings which can be noted in this respect amounts to cylinder coverings *1b* having the lowest and cylinder covering *3* the highest contraction modulus.

A displacement of material such as that occurring in the paper covering is not desirable. In the first place it can result in the development of plastic deformations, and in the second place unfavourable effects can arise in the plane perpendicular to the cylinder axis. Such a displacement of material increases the thickness of the cylinder covering immediately before the contact with the printing forme and because of this the difference between the peripherical speed of the cylinder covering and the speed of the printing forme becomes greater than normal, which has been pointed out by Letouzey[3].

It may perhaps be justified to discuss once more Letouzey's principle of varying type height in the light of the facts here brought out. As the magnitude of the pressure is in fact a greatly variable function of the printing area, especially when the printing areas are small and cylinder coverings of the traditional type are used, the principle of varying type height may in consideration of this seem right at first glance. On closer analysis, however, our previous reasoning remains unshaken. It is, of course, not the *relation* between the sizes of the elements, but the *subtractive difference* which affects the variations in pressure, which the tracings in Fig. 11 clearly show. Even if a full point

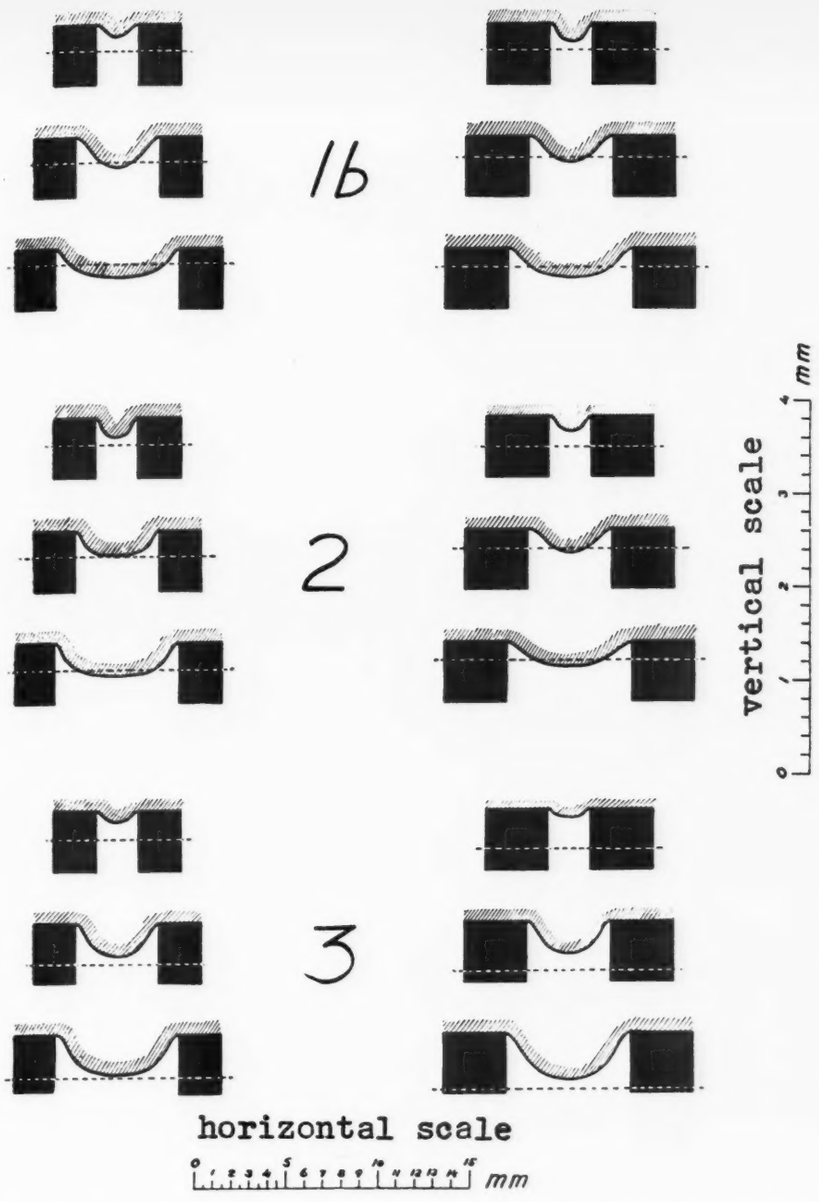


Fig. 14.—Schematic outlines of the contact between packing and printed elements based upon measuring of the photographs in Fig. 13. The vertical scale is 5 times larger than the horizontal scale.

character has only one tenth of the surface of an O in the same type grade, the difference in surface amounts to less than 1 mm² in the grades normally used. In larger type-grades the difference in the size of the surface in different types is of no importance, as these areas come into the horizontal part of the tracing.

On the other hand one could question whether or not it would be justified to increase the height of all printing elements in relation to their absolute size, so that the height of the types would increase according to their grade.

This, however, is not possible in practice, as the necessary difference in height varies greatly with different types of cylinder coverings and is exceedingly small when hard cylinder coverings are used.

It is therefore not possible to equalize the differences in the pressure on types of different grades by varying their height; this effect one must evidently try to bring about by means of the cylinder covering.

From the above it is clearly evident that the elastic qualities of the cylinder covering are of the greatest importance for the distribution of pressure in the forme, and it is hardly an exaggeration to say that the qualities of the cylinder covering are of decisive importance to the quality of the printing and also of great importance to the economic returns of the establishment.

A cylinder covering must consist of a decidedly elastic material so that plastic deformations do not develop in it even from long use.

From what has been said it is furthermore evident that differences in height in the printing form are more easily equalized with a soft cylinder covering than with a hard one. A soft cylinder covering, however, has some great disadvantages, partly because permanent plastic deformations develop easier in a soft than in a hard cylinder covering, partly because of the change in speed which a given point on the surface of the cylinder covering passes through during the moment of impression. The great compression brings about a considerable difference between the radius of the compressed and that of the uncompressed cylinder covering, and consequently also in the peripherical speed. During the printing, a given point on the cylinder covering attains, in relation to the printing forme, a variable speed which is retarded before the printing line and accelerated after passing it. This causes a sliding movement between the cylinder covering and the paper and the forme, which is a common cause of slur. Even when not directly causing slur, this sliding movement results in an enlargement of the print on the paper. In most cases this is of no importance, but when the printing elements are small, such as the dots in the highlights of a halftone block, it may cause a displacement in the tone value.

Because of this it is always desirable to have as hard a cylinder covering as possible, which means a cylinder covering with the greatest possible elasticity modulus. The hardness of the cylinder covering must, however, be adapted to the variations in height occurring in the printing forme, and in order to make possible the use of a hard cylinder covering, the height of all the material in the forme must be kept as exact as possible with a narrow tolerance.

These factors, then, establish a certain elasticity modulus in the cylinder covering, but, as has been previously pointed out, the shear modulus and contraction modulus also affect the distribution of pressure.

The paper cylinder covering in common use lacks the ideal values in respect to these, and it seems very probable that if one were to investigate the qualities of different materials with in other respects suitable elastic qualities and with a suitable elasticity modulus, it should be possible to produce a better cylinder covering for cylinder presses.

This will be the subject of coming investigations at the Graphic Arts Research Laboratory in Sweden. Even now, however, certain hypotheses can be laid down regarding the most suitable material for cylinder coverings.

Thus it seems clear that in the traditional paper covering, paper of the shortest length of fibre possible should be used in order to increase the shear modulus. It may be added that some kind of hard rubber should make a better material for the cylinder covering than paper.

With a cylinder covering fulfilling the requirements stated, it might be possible to print without make-ready if, firstly, all the typographical material has a constant height which must not vary beyond a certain narrow tolerance, and, sec-

(*Continued on Page 84*)

EQUIPMENT & SUPPLIES

"Mighty Midget" Mill

DESIGNED for custom runs and laboratory testing of inks, dyestuffs, paints, varnishes and similar materials, a midget-size mill equipped with a water cooling system for production line service is announced by Morehouse Industries. This Morehouse Model M measures 31½ in. in height and 10 in. in width, and weighs 135 lbs. A standard 3 h.p. or 5 h.p. open-type motor, flex coupling between motor and mill, sealed bearings, double bearing spindle and an adjusting sleeve between upper and lower stones comprise features of the mill. Wing nuts on head facilitate removal of stones for cleaning or changeover. Manufacturer states adjustment for various grind sizes may be made without stopping the mill. Additional information may be obtained by writing Morehouse Industries, in care of *Printing Equipment Engineer*.

Midget-size ink mill manufactured by Morehouse Industries for laboratory and custom run usage.

Sol-Speedi-Dri

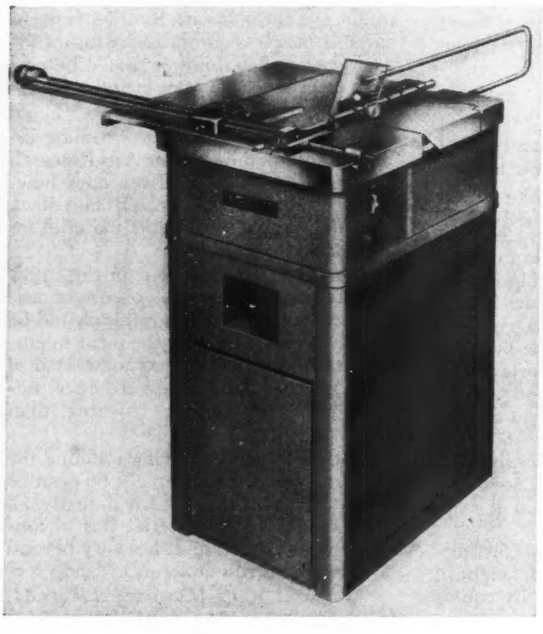
AN ABSORBENT compound which the manufacturer states absorbs floor greases and oils, has been announced by Safety & Maintenance Co., Inc. The improved compound, states C. M. Addis, President of S. & M., has 10 per cent greater bulk per pound. Further information may be obtained by addressing your request to *Printing Equipment Engineer*.

Multi-Purpose Saw

ANNOUNCEMENT has been made by Super Speed Printing Machinery, Inc., of the Multi-Purpose Saw for cutting type high stereotype plates as well as performing regular composing room saw-trimmer work. A mitering machine is included as standard equipment with the machine. The saw arm can be raised or lowered for undercutting or for ripping when action of the trimmer knives is not desired. A sliding gauge block, positive clamp and two types of saw guards are standard equipment. Manufacturer states the saw will cut accurately down to 8 pts.

For stereo cutting, it is equipped with a 135 pica gauge bar, ¾ h.p. capacity motor, 7 in. saw blade and 552 sq. in. of working surface made of Meehanite. Specifications: capacity in front of saw blade (using gauge bar) 14½ in.; floor space, 18 in. by 23 in.; clamp opening capacity, 36 picas; height of floor model, 36 in.; weight, 200 lbs.

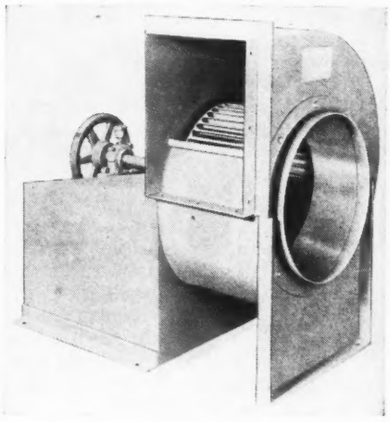
Further information may be obtained by addressing your request to *Printing Equipment Engineer*.



Multi-Purpose saw for cutting heavy type high stereos and performing other composing room cutting and trimming operations.

Ventilating Sets

DESIGNED for removing fumes and general ventilation in the newspaper or printing plant, Chicago ventilating sets are self-contained package units manufactured by Chicago Blower Corp. in two types. The belt drive ventilating sets up to and including 3 h.p., are provided with adjustable motor sheaves. The fan r.p.m. can be varied by opening or closing the motor sheave. Belt driven sets are available in eight wheel sizes and 83 drive combinations from 918 c.f.m. to 12974 c.f.m., at from ⅛ in. to 1½ in. s.p. Manufacturer states that air temperatures up to 250 deg. F. can be handled. Also available in any rotation or discharge.



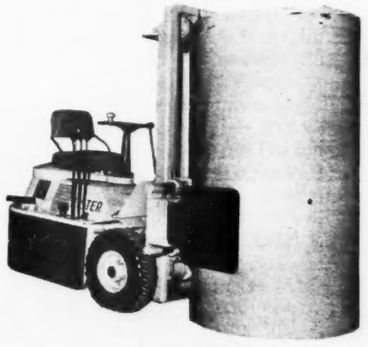
Direct drive, the other type of ventilating sets, can be supplied in five different wheel sizes and nine different speed combinations from 287 c.f.m. to 3200 c.f.m., at from ⅛ in. to 1½ in. s.p. Furnished in clockwise rotation only, but can be supplied in any position of discharge since the housing is adjustable. Both types of ventilating sets have forward curved wheels, all-welded construction, and are statically dynamically balanced. Forward curve type of wheel has low peripheral speeds and large volume capacity. Housings are of welded steel construction, with drilled outlet and inlet duct connections. Graphite impregnated bearings and steel base. Further information may be obtained by addressing your request to Chicago Blower Corp. in care of *Printing Equipment Engineer*.

Re-surfacing Worn Rolls

METALLIZING Engineering Co., Inc., has announced through Metco News a metallizing application for reconditioning worn, damaged and re-ground undersized printing press cylinders. The metallizing process is currently being used in many lines of industry at what Metco describes as "substantial savings". Metallizing in the printing industry is also used for scored ink fountain rolls, dampening rolls and other types, as well as a wide range of drive shaft journals. Many other applications are also suggested such as armature shafts, bearing fits, crankshafts and piston rods. A copy of this bulletin may be obtained by writing Metallizing Engineering Co., Inc., in care of *Printing Equipment Engineer*.

Paper-roll Grab

A PAPER-ROLL Grab for handling rolls of newsprint or other tightly wrapped cylinders ranging in diameter from 23 in. to 36 in. and weighing up to 1700 lbs., has been developed by the Hyster Company for use with its "20" lift truck. The attachment consists of



View of the Hyster Paper-roll Grab for handling newsprint rolls and other tightly wrapped paper cylinders with the "20" Lift Truck.

hydraulically controlled steel plates, faced with rubber for non-slip retention, which exert sufficient pressure on the sides of a paper roll to hold it securely while traveling and stacking.

The plates are flat to allow the squeezing of different sized rolls. Two different positions for the plate grippers are provided by slots 3 in. apart. The flat plates may be slipped into these slots to accommodate rolls of varying diameter. The possible side movement, using the maximum latitude of the two plate positions, varies from 21¼ in. to 40¾ in.

The attachment is operated by a lever located at the driver's right. Further information may be obtained by addressing your request to *Printing Equipment Engineer*.

Justifying Typewriter

ANNOUNCEMENT has been made by the Underwood Corporation of an Automatic Justifying Typewriter. Combining the features of the Underwood standard typewriter with the recently announced carbon paper and fabric ribbon attachment, this justi-

fying typewriter provides a device for obtaining an even right-hand margin on typewritten copy.

The machine is designed primarily for use in the preparation of bulletins, sales letters, portfolios, house magazines, office forms and similar original copy to be reproduced by any printing process. It may also be used for regular office typing.

The right-hand margin justification is accomplished by a variable pitch rack. The operating knobs of this rack extend beyond the carriage on both the right and left sides of the machine. The right extension is for the purpose of turning the rack, and the left extension, inscribed with the numbers 1 through 6, is for the guidance of the operator. The rack may be turned to any one of the numbered positions, making it possible to expand a typewritten line one, two or three spaces, or contract the line one or two spaces.

Further information may be obtained by addressing your request to *Printing Equipment Engineer*.

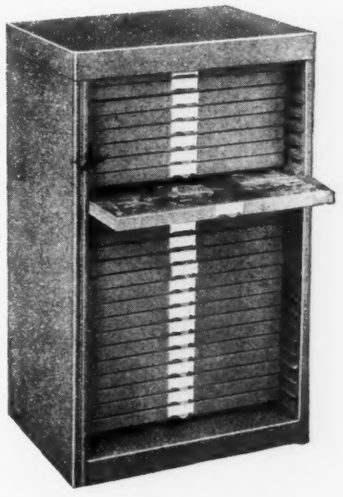
Floor Care Booklet

FLOOR care and maintenance are discussed in a 34-page booklet entitled *The Tornado Method* recently released by Breuer Electric Mfg. Co. The booklet's contents include a description of the equipment necessary for care and maintenance, the steps to be followed with both old and new floors of every type and composition, from preparation through sealing and finishing to maintenance, and a floor stain removal chart.

The 8½ in. by 10¾ in., two-color booklet, contains instructions for every type of floor. Numerous photographs aid in describing floor equipment manufactured by Breuer. Copies may be obtained by addressing your request to *Printing Equipment Engineer*.

Dustproof Cut Cabinet

THE Foster Mfg. Corp. announces a new product named Dustproof Cut Storage Cabinet. The cabinet stands 38½ in. high and is finished in crackle gray. There are twenty-five drawers especially designed to hold artwork, cuts and photoengravings. Cabinet is constructed of prime heavy gauge steel, with more than 5500 cu. in. of storage space. Each drawer measures 15 in. wide, 21¾ in. long and 1⅛ in. deep. Each drawer operates on extended runners which permits the user to view its entire contents



without the fear of having it fall from the cabinet when extended, states sponsor. The cabinets may be stacked two or three high, to save space in smaller shops.

Hold-Down Fingers for Plane-O-Plate

A SET of mechanical fingers that guide plates right up to the cutting edge is one of two improvements in the new hold-down device on the Plane-O-Plate plate shaver manufactured by Monomelt Co., Inc. Maker states the 17 pairs of fingers eliminate the possibility of plates buckling or chattering by holding a firm, even tension all across the plate, or bed full of plates, as the bed moves under the cutter.

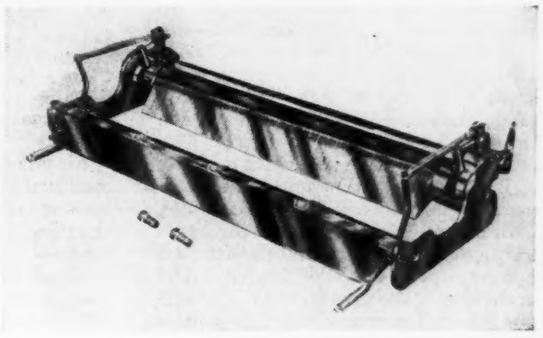
A thumbnail-sized plate, alone or as one of a group, is held as firmly as a plate that fills the 17½ in. by 22½ in. bed. Distance between the forward edge of the fingers and the cutting position of the rotary helical cutter is 0.075 in.

Tension is maintained by ¾ in. flat steel springs built inside the special die-cast fingers. The tension can be adjusted by screws on each end of the hold-down.

The safety bar prevents wrecking of plates or damaging the cutter. If the plate is too high for the bed setting, as might happen in switching from shell casts to type-high plates, the machine will stop, and the bed must be reset by hand before the shaver will take the thicker plates.

The hold-down device now is part of all new Plane-O-Plates. With slight modifications, it also is available for old machines.

The other new feature is a heavy safety bar that automatically stops the machine if the cut setting is for more than 0.035 in.

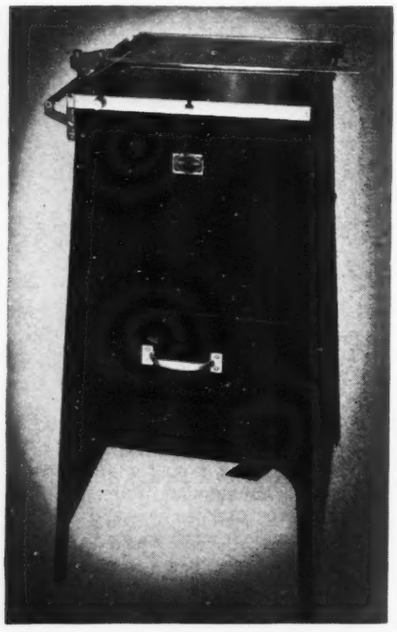


These 17 spring-tension fingers hold plates firmly while being planed on Plane-O-Plate.

Hartsdale Registering Device

THE Hartsdale Co. has recently announced a Registering Device for photoengravers, electrotypers, stereotypers and printers. The device is designed to aid in squaring to register duotone and process color plates, mounting to register all color sets, and materially aiding in plate repair and tack-up jobs.

The table can be adjusted for use on mounted or unmounted plates by use of a hydraulic lift which raises and lowers the heavy steel table. Mounted or unmounted plates (from 21 ga. thickness up to and including type high plates) are brought to a common work level. This is



Hartsdale Registering Device for registering or repairing mounted or unmounted photoengravings, electros and stereos.

accomplished by raising or lowering the table top to correspond to the height of the fixed gauge at the left side of the machine frame. The lift is operated by a foot pedal for raising, and a knurled knob on the right side of the device for lowering.

With the squaring bed (table top) in down position, it will accommodate mounted photoengravings, electros and stereotypes, as well as a chase of type. In this position the device is used for mounting printing plates to register on blocks or for setting type forms to register; also for doing repair work, squaring up mortises, inserting, or making tack-ups.

In the up position, the squaring bed is adjustable by the hydraulic lift to make it the equivalent of type high for any gauge unmounted printing plate (21 ga., 18 ga., 16 ga.), stereo or electros. This position is used for squaring color jobs to register, scribing unmounted plates for mortising, or patching or repairing jobs.

In mounting color plates to register, a transparent sheet of acetate is attached by one edge to a double hinged holder at the rear of the squaring bed. The acetate is swung over and locked in position over the inked key plate by means of a lock. The image is transferred by proofing pressure to the acetate which is then swung back out of the way. The key plate is removed and another plate in the same color set is laid on the table top. The acetate is again swung over, locked in position, and the second (or color) plate is maneuvered into register position. By sighting through the acetate proof, the process is repeated for as many color plates as there are in the set, each one being registered individually with the black proof taken on the transparent acetate sheet. After each plate has been registered it is tacked on the block.

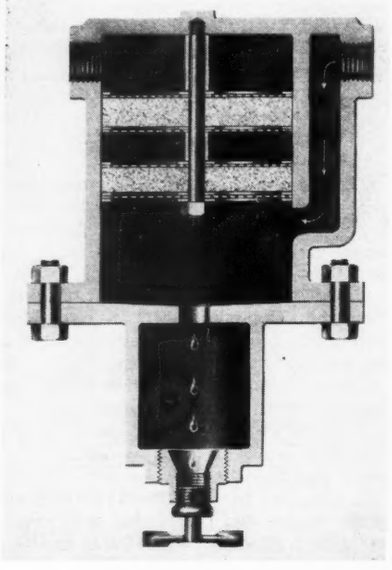
T-square is constructed of stainless steel with an aluminum handle.

Base of the device is 16 ga. steel reinforced with angle iron. An adjustable screw on each leg is for leveling to the floor. A storage drawer in front, a hanger for scale and square, and a pan for nails and hammer are standard equipment.

Standard sizes of the squaring bed are 15 in. by 18 in. and 18 in. by 26 in. Further information may be obtained by writing *Printing Equipment Engineer.*

Compressed Air Separator

ANNOUNCEMENT has been made by James A. Murphy & Co. of a compressed air separator, which is designed to remove oil, moisture and dirt from compressed air at the point of use. Installation is made in the pipe line just ahead of the point of delivery.



Compressed air separator announced by James A. Murphy & Co. for removing oil, moisture and dirt from compressed air. Clean air is separated from unwanted particles by two filter cartridges located in upper chamber of the separator.

Air enters the unit at the top right as indicated by the arrow in the illustration and is conducted to the expansion chamber below the strainer cartridge, where expansion and surface contact separates air and moisture. The air then rises slowly through two cotton felt absorbent pads, packed between perforated brass baffles which are supported in the filter cartridge by grids and spacers. These pads trap oil, grit and moisture, claims the manufacturer, and dry, clean air is delivered at the outlet.

Separated moisture descends by gravity to the moisture collector, where it is held separate from incoming air to prevent re-absorption. The Murphy Paragon C is offered in two sizes. Size No. 1: measures 5¼ in. by 8½ in.; accommodates inlet and outlet pipes sizes of ⅛ in. to ⅜ in.; delivers to one ⅛ in. pipe nozzle only. Size No. 2: measures 6½ in. by 8½ in.; accommodates inlet and outlet pipe sizes of ⅛ in. to ¾ in.; delivers by manifold to four ⅛ in. pipe nozzles or to two ¼ in. pipe nozzles.

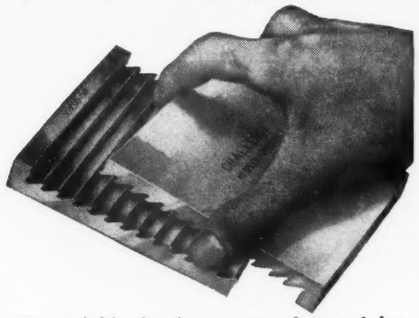
A bulletin in which the Paragon C is described may be obtained by writing *Printing Equipment Engineer.*

Coated Filters

THE EdnaLite Optical Co., Inc., has announced a coated filter for use on cameras with coated lenses. The filters are high vacuum hard-coated on both sides for reducing the reflections in a photograph. Manufacturer states this feature is particularly effective in color work. EdnaLite Filters are set in a Dure-Klad free-floating rim for protection of the filter disk. The filters are available in all color densities for use with black-and-white film and in color densities for color film. Additional information is available by writing *Printing Equipment Engineer.*

Expandable Furniture

LOCK-UP furniture which is expandable has been announced by The Challenge Machinery Co. to facilitate the locking-up of forms for the press. Manufacturer states furniture is adapted for filling out and making up large open forms such as color, imprint, die-cutting, etc. It is expandable from 30 picas (closed) to 50 picas. The furniture expands two picas at a time through a series of steps which form diagonal ridges. These ridges or steps are dovetailed to fit together and prevent slippage. The Hi-Speed expandable furni-



Expandable furniture, manufactured by The Challenge Machinery Co., to facilitate the locking-up of forms for the press.

ture is made in four sizes: 15 picas by 30 picas, 20 picas by 30 picas, 25 picas by 30 picas, and 30 picas by 30 picas. Each size can be expanded 20 picas from a minimum of 30 picas to a maximum of 50 picas. Further information may be obtained by addressing your request to *Printing Equipment Engineer.*

Speed-Flex Press

ORVILLE DUTRO AND SON has announced that two models of the Speed-Flex Press, a rotary roll feed letterpress machine, are now in production. Model A is designed for snap-out carbon forms, order blanks, deposit slips, laundry lists and office forms. Manufacturer claims the press will print, number and strike-in an additional color, perforate and attach a sheet of carbon to a single web of paper at speeds of 18 thousand to 23 thousand impressions per hour. Sheet size is 17 in. around the cylinder, by any width from 5 in. to 15 in.

The Model B is a manifolding press equipped with two units for printing two colors. Sponsor states it will number and strike in an additional color on one side of the web and print on the reverse side. Or the press will print the faces of two webs and number and strike-in on the same faces in a second color. In addition, it is capable of gluing and collating two carbon webs to the printed sheets at speeds of 15 thousand to 18 thousand impressions per hour.

Further information may be obtained by addressing your request to *Printing Equipment Engineer.*

Blueprint Cabinet

A BLUEPRINT cabinet, built of heavy gauge furniture steel has been introduced by the Cole Steel Equipment Co., Inc. In the cabinet are featured gliding drawers on ball-bearing rollers. It is equipped with a lift compressor in the front of the drawer and a hood in the rear to prevent the material filed from curling, creasing or tearing. Among the varied uses for the cabinet

are filing of artwork and photographs; blueprints, maps and plans, engravings and electros, and paper stocks.

The cabinet comes in olive green or Cole gray crinkle finish and the five-drawer units can be stacked as desired. Two sizes are available: one with inside drawer dimensions, 37 in. wide, 25 in. deep and 2¼ in. high; and the larger one with inside drawer dimensions, 43 in. wide, 32 in. deep and 2¼ in. high.

An automatic plunger-type lock controlling all five drawers and a 7½ in. high base are also available. Further information may be obtained by writing Cole Steel Equipment Co., Inc., in care of *Printing Equipment Engineer.*

Untoned News Ink

RALPH C. PERSONS, General Manager of Geo. H. Morrill Co., Div. of Sun Chemical Corp., has announced development of an untoned news ink, made with a colorless vehicle. Manufacturer states the F-74 ink has undergone test runs in a number of newspaper plants. It is claimed that F-74 prints black with a bluish undertone, is more dense in color, rubs off less on hands, and there is less fill-in in large screen areas. Further information may be obtained by addressing your request to *Printing Equipment Engineer.*

Pelouze Tension Tester

FOR measuring of tension in pounds and ounces, Pelouze Mfg. Co. has announced a push or pull tension testing scale. Manufacturer states that a precision calibrated spring and an adjustable head permits the scale to be used in any position. Push or pull rods for the

Pelouze Model 2-T Tension Testing Scale. Capacity 2 lbs., scale graduated by ¼ oz. May be used for testing star where tension on line-composing machines and spring stresses on many machines.

device are 6 in. long, threaded and detachable. Other lengths are also available.

Suggested uses by the manufacturer are: measuring small torques; torques of mechanical parts; spring tension; testing contact point breaker arm tension; measuring tension pressures, mechanical pressures, mechanical masses; balancing roller or platen tensions.

Scale is nickel plated. The spring is fabricated from special treated alloy steel wire. The shell is seamless brass tubing with a solid brass head. The scales are available in three sizes: Model 2-T, capacity 2 lbs., graduated by ¼ oz.; Model 5-T, capacity 5 lbs., graduated by 1 oz.; and Model 20-T, capacity 20 lbs., graduated by 4 oz.

Further information may be obtained by writing *Printing Equipment Engineer.*

Change of Address

The Linotype Parts Co., Inc., announces a change of address for the Chicago agency to 208 North Wells St., Chicago 6. According to Everett C. Miller, Manager of the Agency, (who succeeded recently retired Homer Dunn), the new offices will cover a larger area than the former address at Randolph Street. The telephone number remains the same.

Motor-Driven Arc Lamp

DEVELOPMENT of a motor-driven arc lamp which the manufacturer claims will produce a constant intensity of light and color temperature at a value of standard sunlight or 5400 deg. Klevin, has been announced by the nuArc Company. This constancy of known light, states the manufacturer

N-130 Arc Lamp manufactured by nuArc Company which is claimed to have a definite color value output.

eliminates light measuring devices, reduces exposure time approx. 50 per cent, produces improved line definition, and eliminates undercutting and excess shadows.

A feature of the N-130 Arc Lamp is the reflector, having 600 in. of reflective surface. Manufacturer claims this will give 90 per cent uniform coverage of the copyboard at a distance of 4 ft. Carbons provide 3 hrs. continual burning time and produce up to 4000 ft. candles at 3 ft. from copyboard.

Operates on 115 v. or 230 v. a.c. current or 110 v. d.c. Input is 15 amp. at 220 v. a.c. Current through the arc is 130 amp. and voltage across the arc is 25 v. Carbons are 12 in. long and copper-coated. Equipped with tap changing switch and indicating voltmeter.

A descriptive bulletin may be obtained by addressing your request to *Printing Equipment Engineer.*

Lathe Attachment Catalog

MORE than 130 different attachments and accessories for South Bend Lathes and Drill Presses are illustrated in a recent catalog issued by South Bend Lathe Works. The 28 pages of the 8½ in. by 11 in. catalog contain some items which have been developed recently. The company states that the attachments and accessories described, are designed primarily for use on South Bend machine tools, but adds that many can be adapted for use on other makes. Copies of this catalog, No. 77-U, will be mailed on request to South Bend Lathe Works, 94 E. Madison St., South Bend 22, Ind.

Southworth Humidifier Bulletin

DESCRIPTIVE of the Southworth Humidifier is a bulletin recently released by the Graphic Arts Div. of Southworth Machine Co. entitled, *Moisture—Where and When You Need It.* In the bulletin it is stated that the Southworth Humidifier operates at the slightest change in atmospheric conditions. Also stated is that it maintains any desired relative humidity within a variation of approx. 1 per cent either way. An air flow casing houses an airplane propeller type fan. Power is furnished by an individual motor built into each unit. Adjustment for current variations is made by varying the size of the drive pulley. The units are available with or without motors. A copy of the bulletin may be obtained by writing *Printing Equipment Engineer.*

Natural Rubber Pliolite

WITH the increased availability of high grade natural rubber with low protein content, the Chemical Div. of The Goodyear Tire & Rubber Co. recently returned its cyclized rubber resin, natural rubber Pliolite, to volume production. Two of the specialized applications for this rubber resin are in certain moisture-proof paper coatings and fast drying printing inks. Used as the vehicle in the latter application, the solubility and adhesive characteristics of this cyclized rubber have enabled ink manufacturers to formulate the resin into fast drying inks. These inks, it is claimed, usually possess long press life and produce good halftones with no tendency to "offset, scuff, or smear". Goodyear states Pliolite is formulated into paper coatings having high resistance to moisture vapor transmission, excellent heat seal, stability and anchorage. Further information on this cyclized rubber resin may be obtained by addressing your request to The Goodyear Tire & Rubber Co., in care of *Printing Equipment Engineer.*

PMC Base Bulletin

A COMPREHENSIVE bulletin concerning the use of average jobs in the smaller commercial printing plant where the work can be printed from plates mounted on PMC Sterling Toggle Honeycomb Plate Mounting and Registering Base. The bulletin is published by The Printing Machinery Co. It consists of 12 pages, is well illustrated, is 8½ in. by 11 in. size, printed in green and black ink.

The first two pages of the booklet are devoted to description of how three small catalog jobs can be printed profitably in color on a 22 in. by 28 in. or smaller automatic job press. The saving in press time which is possible through the mounting of electrotype plates on PMC Base as compared with type-and-mounted-cut forms is analyzed. The specific savings in these three jobs amount to 32%, 40% and 31% respectively. Comparative lockup and press register costs were estimated through the use of Par for Printers' estimating tables and were checked further by E. T. Samuel, owner of Samuel & Walker printing firm in Cleveland. Advantages to be obtained through the use of PMC base are discussed. Also illustrated and described in the bulletin are technical details, operating information and accessories. Copies of the bulletin are available by addressing your request to *Printing Equipment Engineer.*

Illustrated Price List

VANDERCOOK & Sons, Inc., recently released an Illustrated Price List of equipment manufactured by that concern. A striking element of the booklet is its cover, on which is reproduced a 4-color process illustration of the Vandercook high speed four-color photo-

engraver's proof press, effectively set-off by a gray background. Cover stock used is 0.010 in. Kromekote, laminated both inside and outside.

The body of the booklet, consisting of 20 pages, is printed in two colors on 80 lb. Lustro enamel and shows the various proof and test presses, gauges and block leveler which are sold by Vandercook or ATF. Numerous photographic illustrations aid in the description of this equipment. Included also are specifications and prices for standard and optional equipment.

Listed in the 8½ in. by 11 in. booklet is the Vandercook Power Offset Proof Press and a four-page section devoted to pre-press equipment. A copy of the Illustrated Price List may be obtained by addressing your request to *Printing Equipment Engineer.*

Commences Production

The Minnesota Mining & Mfg. Co. has announced that production commenced at the recently purchased Bristol, Pa. plant on March 7. C. B. Sampair, Vice President in Charge of Production, indicated there will be "35 or 40 persons" employed at first in the production of adhesives and coatings. Ultimately, the plant will employ about 350 workers as other lines are added to the plant's products. Robert N. Wolfe is manager of the Bristol plant.

Record Selection Booklet

A TABLE on the selection of the appropriate paper for various recording and bookkeeping purposes has been published in a booklet entitled *How to Make Your Records Legible and Lasting* by the Parsons Paper Co. The quality of paper used should be determined, it is pointed out in the booklet, by two variables: the number of years the record is to be kept, and the number of times during its life that the record will be posted, handled or referred to. It is stated that any record that is to be kept for 15 years or more with normal handling should be on ledger or index made of 100 per cent new cotton fibers. "A record to be kept between 10 and 15 years should be on paper or card made with at least 75 per cent new cotton fibers. If it is to be kept five years, it should be on paper or card made with at least 50 per cent new cotton fibers. Records to be kept for shorter periods should be on at least 25 per cent cotton fiber paper or card stock."

Attractively printed in three colors, the booklet measures 3¾ in. by 8¾ in. Copies may be obtained without charge by writing the Parsons Paper Co., in care of *Printing Equipment Engineer.*

Steel Pedestal for Driller

AS ADDITIONS to its line, Pioneer-Toledo Corporation has announced a steel pedestal and accessories for the Pioneer Model C Paper Driller, including cornering, slitting and slotting cutters to permit a wider range of usefulness. The pedestal is of welded construction and is finished to match the driller. This floor unit occupies 4 sq. ft. of floor space.

Until recently these drillers were available only for 110 v. 60 cy. current, but motor equipment is now stocked for those requiring 25 cy., 220 v., or direct current. Drills are said to have a depth capacity of 1¾ in., and are available in 14 sizes.

Electric Heat Bulletin

ELECTRIC Heat In Industry is the title of a recent bulletin issued by the General Electric Co. Graphically illustrated is the use of electric surface heat for reducing electrotype molding pressures and electric heaters for use in facilitating Elrod strip casting. One page is given over to the installation and application of G-E Immersion Heaters for liquids. The bulletin tells how the Ace Electrotype Co. of Cleveland, O., is using Vinylite sheets as a molding medium for producing electrotypes through the use of electric heat. This enables a plastic sheet to be molded under pressure for a period of about 1 min. at 250 deg. F. The 8-page, 8½ in. by 11 in. bulletin explains in detail the use of electric heaters in the operation of an Elrod strip-casting machine. A copy may be obtained by writing *Printing Equipment Engineer.*

(Continued on Page 70)

EXECUTIVE Cs

Ralph H. Schwarz, President of Ace Electrotype Co., Cleveland, addressed the Bag Manufacturers' Association on Thursday, March 10, at the Biltmore Hotel, New York, N. Y. His address was on the subject: *Modern Platemaking Methods.*

J. W. Valiant, Vice President and a Director of the Harris-Seybold Co. for many years, passed away March 12 following a heart attack in Miami, Fla. He joined Harris in 1922 and was made vice

J. W. Valiant, Vice President and Director of Harris-Seybold Co., who passed away recently.

president and Eastern district manager 10 years later. In 1935 he was elected to the Board of Directors and was named a member of the company's Executive Committee when it was formed in 1944. Last December he was appointed special assistant to G. S. Dively, President and General Manager. At the time of his death he was a director of the National Graphic Arts Exposition, Inc. Services were conducted on March 15 in New York City and interment followed at Royersford, Pa.

Joseph S. Hart, Vice President, J. M. Huber Corp., has announced the addition of Addison H. Bissell, jr., to the sales staff of the printing ink division. Working out of the Huber New York office, Bissell will cover the New York State territory, including New York, N. Y. An alumnus of Colgate University, he served as an artillery captain during World War II and has recently been affiliated with the Bissell Varnish Co.

Addison H. Bissell jr. recently joined sales staff of J. M. Huber Corp.

Imperial Type Metal Co. announced recently that Clinton J. Hamilton has joined the sales staff of its New York branch. Mr. Hamilton served four years in the U. S. Army Air Corps. Since the war he has been attending the University of Colorado, Denver. He is a son of Harold Hamilton who is connected with Certified Dry Mat Corp., New York.

Harold W. Gegenheimer, Division Manager of the Printing Machinery Div., Electric Boat Co., has announced the appointment of William F. Huck as Consulting Engineer. Huck was formerly

William F. Huck, appointed Consulting Engineer of the Printing Machinery Div., Electric Boat Co.

Vice President and Chief Engineer for R. Hoe & Co., Inc. In 1945, he formed Huck & Co. to practice consulting engineering and machine designing. He attended the Marine Engineering College, Bremerhaven, Germany; Columbia University, New York; and Polytechnic Institute, Brooklyn, N. Y. As a consultant to the Printing Machinery Div. engineering staff, he will advise and assist in the design of present and future models of EBCO equipment.

It has been announced that Dr. Willard D. Peterson has joined Arthur D. Little, Inc., of Cambridge, Mass., a consulting research and engineering organi-

Dr. Willard D. Peterson announces association with Arthur D. Little, Inc.

zation. Dr. Peterson was previously Associate Director of Research and Development at J. T. Baker Chemical Co. He will consult for the Little organization in the fields of process development and the general field of photographic materials and facsimile duplication, with particular emphasis on diazo-type reproduction. Dr. Peterson is a graduate of Iowa State College and received his PhD. from Harvard University.

Mergenthaler Linotype Co. has announced the election of John W. Reid as Treasurer of the company. He succeeds George A. Schwaninger who has retired after a quarter century career with Lino-

John W. Reid, elected Treasurer of Mergenthaler Linotype Co.

(© Bachrach)

type. Reid attended New York University and is a veteran of World War I. Since his association with Linotype in 1914, he has progressed through various positions in the accounting department to his present appointment. During

Carl A. Hergrueter, Assistant Secretary-Treasurer of Mergenthaler Linotype Co.

(© Bachrach)

World War II, he served on the WPB Advisory Committee on Typesetting Machinery. He is now a member of the Export Advisory Panel on Typesetting Machinery of the Dept. of Commerce, Office of International Trade. Along with the same announcement comes word of the election of Carl A. Hergrueter to Assistant Secretary and Assistant Treasurer. He has served as assistant to Reid since last October. Hergrueter, a graduate of the School of Commerce of New York University, had previous experience in the Treasury Dept. of Westinghouse Electric, International and the U. S. Trust Co. of New York. He served overseas with the Coast Guard during World War II.

Otto Wolf, Assistant Production Manager, Chicago *Tribune*, vacationed in March at St. Petersburg, Fla.

According to a recent announcement by E. B. Davis, Vice President of Ideal Roller & Mfg. Co., Inc., Ken N. Cramer, Cincinnati Branch Manager, was guest speaker at the January meeting of the Louisville Club of Printing House Craftsmen. Cramer spoke on the subject

(Continned on Page 72)

National Graphic Arts Expositions Opens Office and Elects Officers

ANNOUNCEMENT has been made by the National Graphic Arts Expositions, Inc., of the establishment in Chicago of offices. The headquarters, which will open as of May 1, will be located at Room 802, 105 West Monroe St. Also announced was the election of 19 directors representing all phases of the Graphic Arts.

Augustus E. Giegengack, former Public Printer will have complete management of the show. He has been granted a leave of absence from his present business connections.

Seven international conventions of Graphic Arts associations have already been scheduled for the period of the Sixth Educational Graphic Arts Show, September 11-23, 1950 at Chicago. Other organizations are expected to make similar arrangements. Scene of the exposition will be the International Amphitheatre at 43rd and Halsted Sts. The event promises to be the greatest show of printing, lithographing, gravure and allied trades equipment ever staged anywhere. Following opening of the Chicago headquarters, full details of available space will be announced.

At the annual meeting held on March 14 at Hotel New Yorker, New York, the following officers were elected: President, A. E. Giegengack; Senior Vice President, Fred W. Hoch, Fred W. Hoch & Associates, New York; Vice Presidents, Gradie Oakes, Process Color Plate Co., Chicago; Carl E. Dunnagan, Inland Press, Chicago, and R. Verne Mitchell, Harris-Seybold Co., Cleveland; Treasurer, Joseph F. Herberger, Hamden, Conn.; Secretary, S. Frank Beatty, Graphic Arts Assn. of Illinois, Chicago.

Representing Craftsmen on the Board of Directors are: Messrs. Giegengack, Hoch, Oakes, Herberger and Russell J. Hogan, Blanchard Press, Inc., New York; Joseph J. Skach, Esquire Co. and Edward Christensen, W. F. Hall Printing Co., both of Chicago.

Representing employing printers are: Messrs. Dunnagan and Beatty, and Allerton H. Jeffries, Jeffries Banknote Co., Los Angeles, and Paul C. Clovis, Twentieth Century Press, Inc., Chicago.

Representing trade compositors: Frederick H. Lutz, Brockton, Mass.; bookbinders, Donald C. Brock, Brock & Rankin, Chicago; International Supply Salesmen's Guild, Lester A. Neumann, M & L Typesetting and Electrotyping Co., Chicago; trade press, Charles C. Walden, Jr., Walden, Sons & Mott, Inc., New York.

Representatives of the printing equipment field are: Mr. Mitchell and Neal Dow Becker, Intertype Corp., Brooklyn, N. Y.; J. E. Eddy, Miehle Printing Press & Mfg. Co., Chicago, and Edward G. Williams, American Type Founders, Elizabeth, N. J.

The executive committee is comprised of Messrs. Giegengack, Beatty, Brock, Christensen, Clovis, Dunnagan, Eddy, Neumann, Oakes and Skach.

SNPA Mechanical Committee

Talbot Patrick has accepted re-appointment as chairman of the Southern Newspaper Publisher's Mechanical Committee. Mr. Patrick is president and publisher of the Rock Hill (S. C.) *Herald* and president of Goldsboro (N. C.) *News-Argus*.

The vice chairman of the committee hails from the Western area of SNPA. He is C. M. Bartlett, president and general manager of the Miami (Okla.) *News-Record*.

The personnel of the committee is made up of mechanical superintendents and some other executives of newspapers ranging from the small city class up to the metropolitan newspapers. The committee personnel is as follows:

Chairman, Talbot Patrick, Publisher, Rock Hill (S. C.) *Herald*; Vice Chairman, C. M. Bartlett, Gen. Mgr., Miami (Okla.) *News-Record*; W. A. Carns, Supt., Birmingham (Ala.) *News* and *Age-Herald*; Ray Kimball, DeQueen (Ark.) *Citizen*; Joel Brooker, Stereotype Supt., Tampa (Fla.) *Times*; Frank Drake, Atlanta (Ga.) *Constitution*; M. George Martin, Production Mgr., Louisville (Ky.) *Courier-Journal* and *Times*; Luther Wright, Mechanical Supt., New Orleans *Item*; Frank Richardson, Vicksburg (Miss.) *Herald-Post*; C. L. Ray, Mechanical Supt., Winston-Salem (N. C.) *Journal-Sentinel*; H. R. Hayen, Ponca City (Okla.) *News*; Tom Crenshaw, Columbia (S. C.) *State*; A. W. Keller, Johnson City (Tenn.) *Press-Chronicle*; Leven Deputy, Production Mgr., Dallas (Tex.) *News*; M. P. Tanner, Lynchburg (Va.) *News* and *Advance*; George W. Hodel, Beckley (W. Va.) *Post-Herald* and *Register*.

Charles H. Merbitz, 3230 Disston St., Philadelphia 24, Pa. is now representing Vulcan Proofing Co. Formerly, Mr. Merbitz was associated with George H. Morrill Div. of Sun Chemical Corp. He will represent Vulcan in the sale of offset and newspaper blankets in Pennsylvania, Maryland, Delaware, Virginia and West Virginia.

William J. (Bill) Morrison (72), pressroom foreman of the Cleveland *News*, has retired from active duty after 57 years service to the newspaper printing industry. He has been associated with the old Cleveland *Leader* and later with the Cleveland *News* since 1918. He started in the newspaper game on the *Drover's Journal* in Chicago. He plans to take it easy at his home, 26945 Westlake Rd., Bay Village, O., a suburb of Cleveland. Elmer H. Smith (42) who trained under Morrison commencing in 1925, succeeded Morrison as Cleveland *News* pressroom foreman. Smith lives with his wife Cecelia and a nine-year-old son at Newbury, O. His hobby is raising white New Zealand rabbits. He has worked in St. Louis and Detroit. He has been a journeyman pressman at the Cleveland *Press* since 1945. He resigned presidency of the Cleveland Newspaper Pressmen's Union to take over the *News* pressroom foremanship.

ATF Press to India

American Type Founders has announced the shipment of a three-unit web-fed ATF-Webendorfer offset press to *The Daily Tej*, of New Delhi, India. It is the first of this type newspaper press to go into Asia, the company said. The press was ordered by the chief executive director of the paper, Desh Bandhu Gupta, during a visit to the United States. Members of the publication's staff are now in this country studying the latest American methods of offset printing. The newspaper recently celebrated its silver anniversary, an outstanding occasion in free India's journalism.

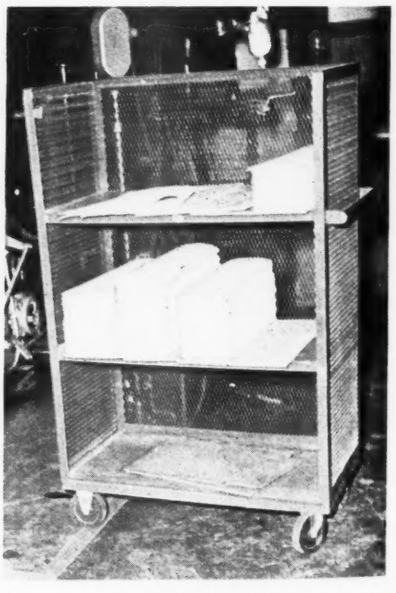
Bindery Sig. Truck

By ROBERT R. GREER*

**Printing Engineer, Los Angeles, Calif.*

FOLLOWING the straight-line workflow principle, the bindery signature truck shown in the accompanying illustration is one of the equipment items that will help keep work going in a straight line. Its use also contributes to work simplification. It has also proved to be indispensable in several departments in the same plant. The writer designed this truck for 600 lb. load with 25% overload capacity. In one plant where the truck is used, it underwent a severe breaking-load test of 1400 lbs. without damaging the truck in any particular.

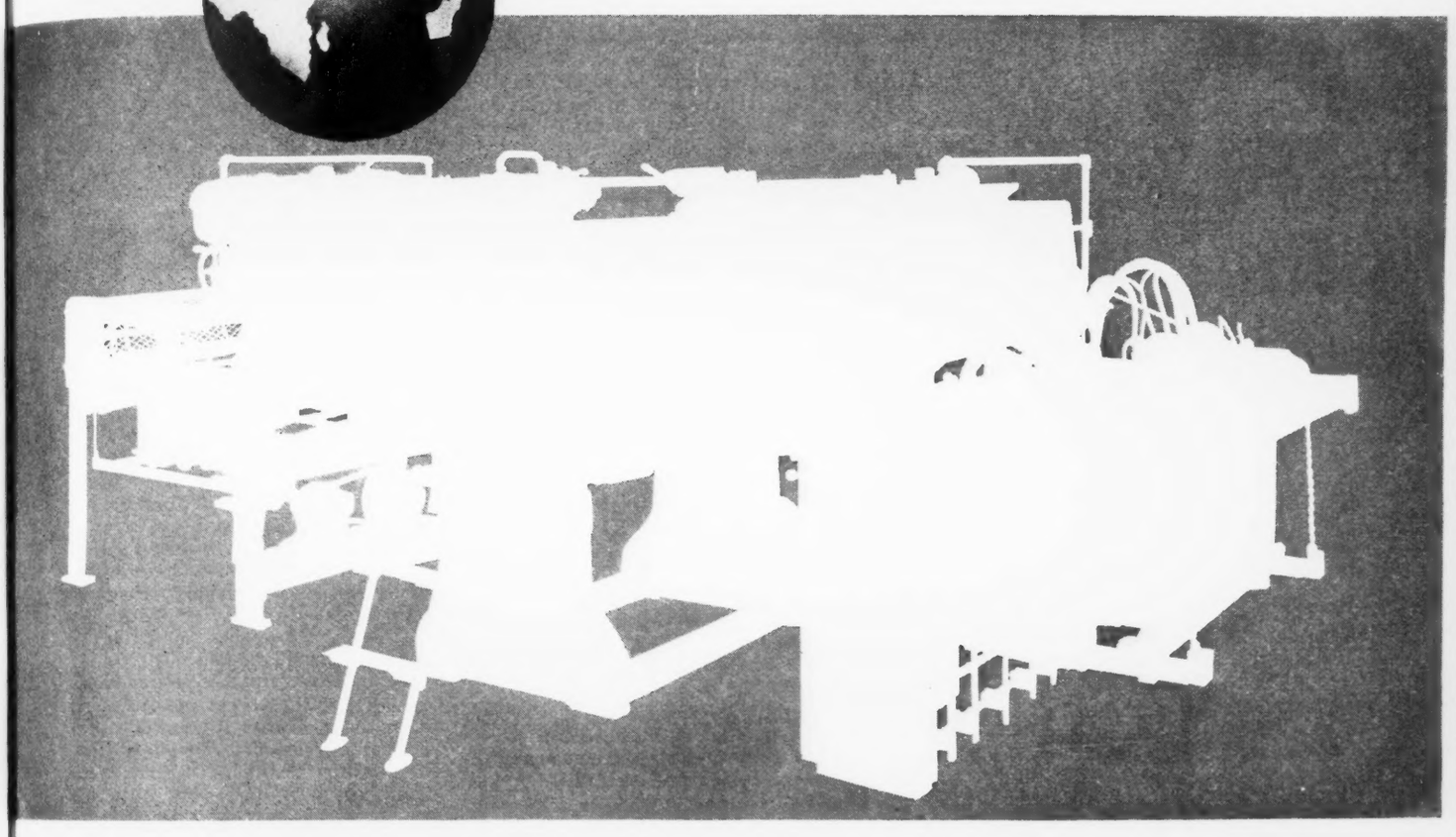
Size of the truck body is 36 in. wide by 18 in. deep. Height from floor is 48 in.

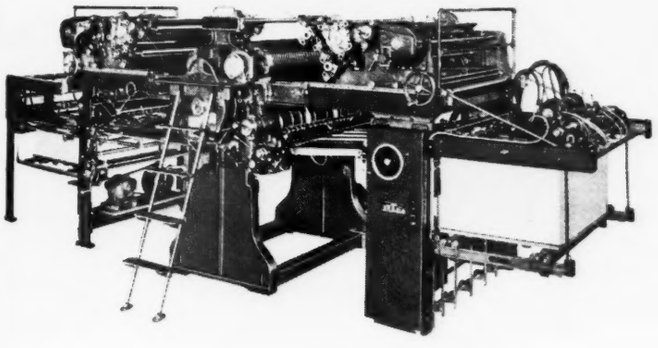


Casters are 5 in. diam. hard rubber ball bearing. Two swivel and two rigid.

The frame is constructed of hard-welded angle iron. The siding is diamond perforated expanded metal. The handle is on one side only and provides easy mobility. The plywood shelves rest upon the steel frame with center rib.

s there a void in your business?





Something missing? . . . something that should loom up large on the profit side of your ledger? . . . work you have to pass up because you're "just not equipped to handle it"?

The answer may be in the Cottrell Two-color Rotary sheet fed press. With this efficient and versatile, high speed unit, you, like so many other wise printers and publishers, may open up new and very profitable markets and find new gold in your present ones.

There'll never be a better time to ask us about the possibilities than RIGHT NOW!

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Bishop Processes

For pre-makeready of electrotype and stereotype plates and for making ready on letterpress cylinder printing presses—Laminated mat, skill, and special equipment in combination employed

By HOMER L. BISHOP*

**President, Bishop-Stansell Co., West Carrollton, O.*

II.

The Bishop Overlay

IN cylinder printing press makeready, the pressman makes his own handcut overlay or utilizes one of the processes, such as the chalk overlay. It is generally accepted that the overlay made by hand is superior to the others, because the pressman can put into it the detail he deems necessary. In making a hand-cut overlay the pressman selects two or three of the printed sheets from the press delivery and follows the steps described herein.

One of the sheets is used as a tag sheet, to which cut-out areas from the other sheets are pasted to effect a build-up that assures a graduation that will print each tone value at the proper pressure. In some cases, a build-up of one ply is sufficient, while on others two and three-ply are used. To make an overlay of this type considerable time is required. This type of overlay is subject to errors which are not the fault of the pressman. They are due mainly to the paste or bonding material used to hold the cutout areas to the tag sheet. In drying out, this paste reaches a crystallized state which results in hard, uneven spots throughout the entire overlay. These hard spots will show up due to regititive pressure. As it is necessary to print with pressure we find the pressure of operation upon this type of laminated body will cause it to break down. This results in excessive make-ready to compensate for the paste and pressure applied.

The Bishop Overlay

The Bishop Overlay consists of two laminated sheets. The base sheet is of 0.006 in. manila stock which is not affected by heat. Careful calendering of this stock in narrow rolls provides precision caliper. To this base sheet a 0.003 in. top sheet is laminated with a wax agent. This sheet is of high finish to secure a proof of high fidelity. To the back of this top sheet there is applied a machine coating of thermoplastic adhesive. On reaching a given temperature this adhesive will soften and adhere firmly to the base sheet.

When a job is to be printed from a form of flat plates, the proof for the overlay can be pulled from the plate in the foundry, before it is final-finished or routed as in Fig. 4. Should the form run in multiples of two up or more, all handcuts for this subject are proofed from the first plate up for finishing. The Bishop overlay is then passed on to the pressroom for cutting. Thus the overlays can be cut in the pressroom before the plates are delivered.

Cutting the Overlay

The Bishop overlay (Fig. 4) is cut as follows: First, the overlay is trimmed to size, and the register marks are cut for matching to the point sheet. Then it is marked for color, position and press. The areas requiring the most pressure are outlined with a sharp spot-knife, and the top white sheet is peeled away from the base manila. The areas outlined will hold in perfect register and stay in place during the peeling operation.

In the Bishop overlay is found a close relation to the etched depth of the average printing dot found in original halftone plates. If an overlay with 0.010 in. to 0.012 in. depth is used, excessive make-ready will result. Since a relief of 0.003 in. is used in the Bishop overlay, this danger is greatly reduced, and the actual tone gradation in the etched screen is allowed to print in true value.

Bonding the Overlays

After Bishop overlays are cut, they are ready to be given a permanent bond in the Electric Bonding Transfer Unit, shown in Fig. 5. This unit is built on the order of the old style letterpress. It is composed of a 16 in. by 24 in. base, with an adjustable top platen which is raised or lowered by a wheel attached to a screw lift. The top and bottom platens are precision ground so that on contact, precision pressure is applied. The base platen is heated by strip electric heaters controlled by a thermostat. A control light on the front of the unit indicates to the operator when the proper temperature has been attained. This bonding unit is built of aluminum and weighs approx. 160 lbs.

To understand what takes place in the Bonding Unit, the operator must remember the aforementioned information regarding the wax and thermoplastic coatings on the overlay sheets. The wax laminant is identified as a temporary bond, and the thermoplastic is identified as a permanent bond to hold the cut-out areas on the base sheet.

As many as 40 to 50 overlays are placed face up between single layers of clean, used newsprint. It is advisable to use ordinary newspaper and cut off the folded edges, thereby making a book or folder composed of separate sheets. For each sheet of newspaper, supply one of the overlays until the folder is full.

The folder is then placed in the Bonding Unit with the overlay detail face up. Pressure is applied by turning down the wheel at the top of the Bonding Unit. The overlays are left under pressure for 1 min. or more depending upon the number of overlays. They are then removed from the unit and turned over. Then they are returned to the Bonding Unit for approx. the same time as above.

In the first operation, the wax temporary bond is absorbed by the newsprint sheet and the base sheet. At the same time the heat from the unit has affected the thermoplastic permanent bonding, resulting in the white top sheet bending itself firmly to the manila base. By replacing the assembly for a second heat in reverse position, we have brought the thermoplastic in direct contact with the heat of the unit, thereby making doubly certain of a complete bond transfer. The result is an overlay that is even in every respect. The thermoplastic, being machine-coated, is carried over the entire area of the overlay in equal distribution. The overlays are now ready to be pasted in registry to the point sheet.

Off-Travel Condition

Many pressmen are of the opinion that when making an overlay it is necessary to have a step-by-step gradation in tone values, or a shading from solids to semi-solids through the middletones to highlight and extreme highlight areas. We have found in our experiments that many errors are committed by this procedure. The main fault is the off-travel condition

Fig. 4.—Miniature reproduction of a Bishop Overlay which has been hand-cut. At left the plate has been proved on the overlay and has been cut out for makeready. At right the bearer and type areas of the proof have been stripped off the base sheet with the solid and middletone areas of the proof remaining on the sheet to supply extra impression of the cylinder packing upon the plate.

The Bishop Overlay consists of a 0.006 in. thick manila base sheet. On top is fastened with thermoplastic adhesive a sheet of white stock 0.003 in. thick.

In the Overlay shown at left, the highlight areas in the halftones have been cut away to provide more printing pressure for the middletones and solids. In the illustration at the left, it will be clear that proof of the plate was taken before the bearers were trimmed off and before routing the plate itself. Proofing in this manner permits the pressman to cut the overlay and have it and other overlays ready for the press by the time the finished plates in the form are delivered to the pressroom.

Original size of this magazine advertising page was 7 in. by $10\frac{3}{8}$ in.

The arrowheads cut clear through the base sheet in illustration at left provide a means for the pressman to hang the overlay on the cylinder packing in exact register with the plate in the form.

that will exist when using an overlay of several strata. The extra layers will enlarge the packing cylinder to such an extent that the detail cannot print firmly, because the true rolling contact of the plate and impression cylinders has been destroyed. The first impressions will show a high fidelity in the printed sheet, but will gradually fade as the run progresses. Extra makeready is then necessary in the form of spots which constantly need attention and result in worn plates. It is customary, in some instances, to pass this fault on to the electrotyper as furnishing an inferior plate.

The Bishop Process Used on Stereotypes

LITTLE emphasis has been placed on stereotype plates for use in high caliber letterpress printing. However, during the last few years, it has been found that this type of flat and curved plate has its place in the letterpress field for magazine and label printing. By using the Bishop mat developed especially for the treatment of stereotype plates, the tone values can be raised and lowered in the casting operation, so that the stereotype plate will print with fidelity.

The Bishop Special Mat is similar to the Bishop overlay mat with the exception of the permanent bonding material. Like the overlay, this Bishop Special Mat is composed of a 0.006 in. manila base sheet with a top sheet 0.003 in. thick laminated to it. The back of the top sheet is machine-coated with a permanent-setting soluble glue, such as is used on envelopes and labels.

These two sheets are laminated together with a wax that has a much lower melting point than the glue on the top sheet. After taking a proof from the plate on the top white sheet of this mat, the operator cuts in the register marks needed to match the back of the stereotype casting mat before casting.

The next step is to outline the areas in the proof which are to be given an extra depth in the plate. This is done with a sharp spot-knife, cutting through the 0.003 in. top sheet to the manila base. The unwanted portions of the top sheet are stripped off and discarded. It is advisable that the operator cut back into the highlight area $\frac{1}{32}$ in. This will permit the natural curve of the stereotype matrix to conform to the cut-out.

After a series of these mats have been cut, they are placed face up between newsprint, allowing one sheet of newsprint to each mat. The bottom sheet of newsprint which is closest to the heated base of the Bonding Unit is sponged with water. The operator will soon determine the amount of water to be used. Too much water will result in a loose bond due to an excess of steam. The same bonding operation as that used in the Bishop Overlay is then followed. The action which is effected is as follows: The controlled heat from the base plate of the Bonding Unit creates low pressure steam and softens the glue coating on the back of the top sheet of the mat. On becoming moist, the glue will adhere firmly to the manila base sheet. The temporary wax bonding agent will be absorbed into the newsprint and base sheet and will not interfere with the permanent bond between the top glue-coated sheet and the base sheet. By leaving the whole assembly in the bonding unit at least 2 min. a permanent bond is effected.

After the mats have been removed from the bonding unit, they are ready for the cast-treating operation. By using the register marks that were previously cut into the Bishop mat, the mat is matched in proper position on the back of the stereotype mat and fastened

Linotype Research Announces

Linolizing*

- **Revolutionary new process prevents metal adhesion to molds and spacebands**
- **FREE on all new Linotypes**
- **Available to Linotype users**

NOW, to cut your maintenance costs, all Linotype molds and spacebands are treated with the new Linolizing process. This process is the greatest development yet introduced for preventing adhesion of metal to molds and spacebands and for reducing matrix damage. No more crushed matrix side walls caused by metal adhesion to spacebands. No more metal adhesion to molds causing hard ejection—strain on ejector parts—battered slugs. No more metal fusion to molds requiring special cleaning—extra maintenance time.

Shops which have been testing Linolized molds and spacebands say that Linolizing is the most remarkable development they have seen for preventing damage to matrices, for saving maintenance time, and for producing better slugs. Reductions in maintenance time up to 50% have been reported.

WHAT LINOLIZING IS Linolizing is a special process for coating metals with a hard, dense alloy. The hard alloy is vaporized in a vacuum at extremely high temperatures. A sputtering technique, similar to that used in coating optics, deposits the alloy on the base metal. The alloy becomes an integral part of the base metal, producing a surface hardness 20% greater than that of high-speed steel. Type metal will not adhere or become fused to the hard, lustrous, glass-smooth Linolized surface.

LINOLIZING PREVENTS MATRIX DAMAGE Since type metal cannot fuse with Linolized surfaces, the casting surfaces of Linolized spacebands stay clean—free of adhering metal. This eliminates the main cause of crushed matrix side walls. Clean spacebands also assure perfect justification of the line during casting.

Metal does not adhere to Linolized molds causing the face of the matrix to become impregnated with type metal. Clean matrices help eliminate metal shavings in the distributor box and help keep magazines free of metal accumulations. Additionally, the bridges between characters on two-letter matrices will not become rounded or damaged by being forced against the face of a mold containing irregular deposits of metal. Matrices are pressed firmly against a clean mold during casting.

NEW LINOLIZED SPACEBANDS AVAILABLE New spacebands with Linolized slides are available for $1.65 each, complete. Linotype spaceband wedges will be reconditioned and new Linolized slides installed for $1.20 each. Linolized slides alone are available for $1.00 each if you care to apply them to your present wedges. Because Linolized spacebands require less maintenance than ordinary spacebands, it is to your advantage not to mix them on one machine. It is suggested that you keep them together in your shop by ordering Linolized spacebands or spaceband slides in full sets. In this way you will receive the full benefit of all the economies offered by Linolized spacebands.

*TRADE MARK—Surface Treatment.

LINOLIZED MOLDS ASSURE EASY EJECTION Linolized molds remove one of the most frequent causes of hard ejection: metal adhesion to the mold-casting surfaces. With Linolized molds, a smooth, easy push ejects each slug. Strain on ejector parts, noise and damaged slugs due to hard ejection are avoided. Machine tie-ups caused by hard ejection are eliminated, thereby saving hours of productive time.

PREVENTS MOLD DAMAGE Because type metal cannot become fused to Linolized molds, the use of abrasives, polishes or sharp tools to remove metal accumulations is not necessary. The danger of damaging or marring mold surfaces while removing metal deposits is eliminated. Linolizing lengthens the life of your molds and does away with the greatest cause of mold trouble and maintenance expense.

ELIMINATES MOLD CLEANING All surfaces of the new Linotype molds which contact molten type metal are Linolized. No special cleaning is required even after months of continuous operation. Tests have proved that an occasional wiping with a soft cloth is the only maintenance normally required.

IMPROVES QUALITY OF SLUGS Linolized molds do not require polishing, thus eliminating the primary cause of rounded mold edges. Edges stay sharp and clean preventing fins at the bottom of the slugs when lines are ejected. Because metal does not build up on the face of the mold, matrices hug the molds tightly when lines are being cast –matrices cannot be held away from the mold by metal accumulations.

NEW LINOLIZED MOLDS AT NO EXTRA COST New Linolized molds for your present Linotype are available at the regular mold prices. This means you receive FREE all the advantages of Linolized molds. Linolized molds are available only from Mergenthaler Linotype Company. On all new molds you order, you save $20 or $25 because Linolizing is included at no increase in mold cost.

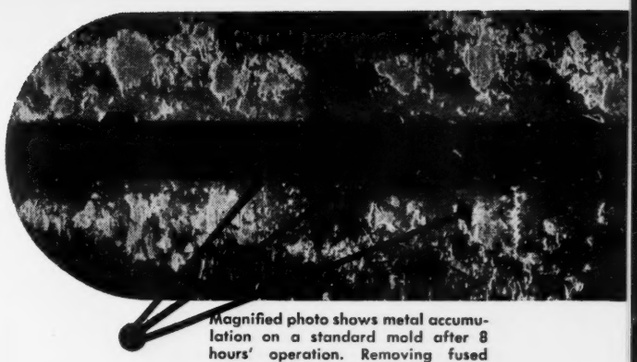
LINOLIZE YOUR PRESENT MOLDS All Linotype molds in good condition can be Linolized. Molds which are scratched, nicked or whose edges are not clean and sharp must be repaired before they can be Linolized. The cost for repairing molds depends upon the mold condition and will be billed separately. If the condition of your molds indicates that extensive reworking will be necessary, it may pay you to consider purchasing new Linolized molds.

Linotype Universal Adjustable and Advertising Figure molds (not recessed) will be Linolized for $20; recessed and display Linotype molds $25. Where no repair work is needed, processed molds will be shipped to you in ten days.

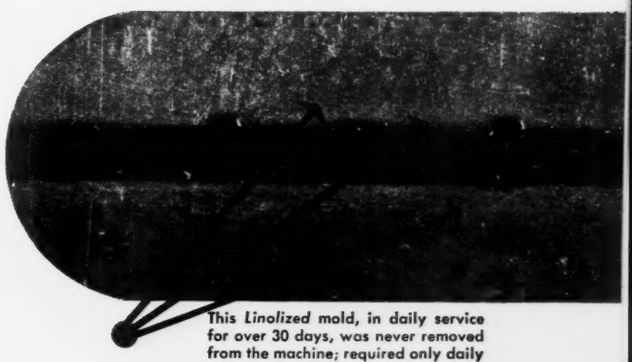
TO ORDER LINOLIZED MOLDS—SPACEBANDS No special procedure is required for ordering new Linolized molds or spacebands. Use your standard order form or contact your Linotype representative. When ordering by mail, please give mold or spaceband part number to assure prompt handling of your order. All orders for new molds and spacebands should be sent to Mergenthaler Linotype Company, 29 Ryerson Street, Brooklyn 5, New York.

TO LINOLIZE YOUR MOLDS—SPACEBANDS All molds and spacebands returned to the factory for Linolizing and reconditioning should be sent with order to Mergenthaler Linotype Company, Receiving Department, 23 Hall Street, Brooklyn 5, New York.

LINOLIZING FREE ON ALL NEW MACHINES Linolized molds and a complete set of Linolized spacebands are now standard equipment on all new Linotypes. Another Linotype development for reducing composing-room expenses is yours at NO EXTRA COST when you buy a Linotype. And because Linolizing resulted from Linotype Research, only Linotype can offer you this time-saving, cost-cutting feature.



Magnified photo shows metal accumulation on a standard mold after 8 hours' operation. Removing fused metal takes time—often mars molds.



This *Linolized* mold, in daily service for over 30 days, was never removed from the machine; required only daily wiping with a soft cloth.

Untreated spacebands after 8 hours' run without cleaning. Note the metal fused to slides. Removing metal deposits cuts production time.

Linolized spacebands after more than 30 days' operation—no metal deposits. Slight discoloration from heat does not affect Linolizing. Spacebands were graphited *for lubrication only.*

MERGENTHALER LINOTYPE COMPANY
29 Ryerson Street, Brooklyn 5, New York

LINOTYPE
T.M.

LEADERSHIP THROUGH RESEARCH

Set in Linotype Electra, Erbar and Spartan

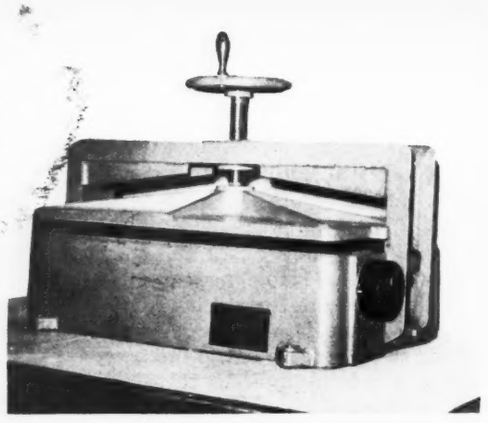


Fig. 5.—Bishop Electric Bonding Transfer Unit. This unit is built on the order of the old style letterpress. Its base measures 16 in. by 24 in., is constructed of aluminum and weighs 160 lbs. The top platen is raised and lowered by means of the vertical screw and handwheel. The bottom or stationary platen is heated by electric strip heaters and platen temperature is controlled by a thermostat. Red jewel light indicates when proper platen temperature has been reached.

The Bonding Transfer Unit is used for dissipating the temporary low melting point wax bond on Bishop Overlay which is used on cylinder and rotary presses, and also the Bishop Mats for obtaining Stereotype Plate pre-makeready.

Reason for disposing of the wax bond is that the cutouts in the makeready will not hold the packing cylinder of the press when printing from flat or curved electrotype plates if held together by the wax only.

As has been stated in the third paragraph above, the wax bond is liquefied and dissipated when sufficient heat is transmitted from the platen at which time the wax will be transferred to or blotted by a sheet of newsprint and base sheet immediately next to the overlay. Instead, a thermoplastic adhesive, which has now become melted under the influence of the heated platen, takes the place of the wax bond which has been absorbed by the newspring and the base sheets.

As many as 40 or 50 overlays placed face up between single sheets of newsprint may be placed in this machine at one time. After having been removed from the Bonding Unit, the overlays are ready to be mounted on the packing of the press's impression cylinder.

securely with pieces of tape. The regular casting operation is followed from this point on.

It will be found that the areas held in the mat have a depth of 0.003 in. in the plate. This provides a great measure of protection from plate wear on the press and assures the printing of a clean highlight dot. The solids and middletones will thus print firmly without damaging these delicate areas.

Because of the excessive amount of shrinkage in the roller-molded mat, it is impossible to use the Bishop makeready on this type of mat. Only casting mats molded by direct pressure can be treated successfully in this manner.

In shaving the plate to its final height, it is necessary to remove the treating mat from the back of the stereotype mat and place it on the face of the stereotype plate to be used as a shaving mat. The plate with the Bishop mat is then placed upside down upon the planer bed. Since this operation is necessary, it has been found much cheaper to cut two identical mats. One is to be used as a casting mat, and the other to be used as the plate shaving mat. This, of course, is only needed where more than one plate is to be cast from the same casting mat.

The final shaving operation is accomplished by the operator adding the thickness of the base sheet of the shaving mat to the final thickness of the plate. Thus, if the final plate shave is 0.152 in., the Bishop mat thickness of 0.006 in. is added to give a final shaver setting of 0.158 in., or a difference of 0.006 in.

(Concluded)

New Printers' Roller Manufacturing Plant

A NEW plant for the manufacture of rollers for newspaper, letterpress and offset printing, and using natural or synthetic rubbers, and also for the manufacture of vulcanized oil rollers mainly for offset printing, was put into operation during March in the town of Willow Grove, Pa., just outside of the city of Philadelphia. This new company is organized under the laws of Pennsylvania as the Moreland Corporation, and will operate under that name.

Construction of the plant and installation of machinery has been going on since the latter part of June 1948. The plant occupies over 40,000 sq. ft. of manufacturing space, with additional vacant land for future improvements. It is served by its own Pennsylvania Railroad railroad siding. The plant located on the main highway between New York and Philadelphia.

"While this plant and equipment are both new," said President Carl G. Bingham, "those who are conducting this enterprise are not novices in the printers' roller business. All have been, and now are engaged in the manufacture of composition rollers, and some of them in the manufacture of rubber and vulcanized oil rollers; and all of them have been selling rubber rollers for a number of years past."

The concerns interested are the Harrigan Roller Co., of Baltimore, Md.; Godfrey Roller Co., Philadelphia; Frank A. Reppenhagen, Inc., Buffalo, N. Y.; National Roller Co., New York, N. Y., and Sam'l Bingham's Son Mfg. Co., Chicago.

The officers are Carl G. Bingham, President; William P. Squibb, Vice President; H. Howard Colehower, Secretary, and Thos. W. Ford, Treasurer. Directors are Carl G. Bingham, Frank A. Reppenhagen, H. Howard Colehower, Thos. W. Ford, James A. Brinning, and Wm. P. Squibb.

The company is organized under the laws of Pennsylvania, with a capitalization of $250 thousand. It will have sales representatives in the important cities in the East. The Eastern stockholders will market its product.

Believed To Be a First

The Milwaukee *Journal's* 24 page Annual Spring Fashion Section for Sunday, March 13 contained a double-page spread four-color process advertisement for the Boston Store. In the *Journal* it is stated it is believed to be the first time that any newspaper has printed a full center spread, in r.o.p. process color, with regular high speed presses on newsprint. This double spread color advertisement, and two other color pages, stated Robert K. Drew, Advertising Manager, put the *Journal's* expanded color printing facilities to their greatest test. Mr. Drew commented that few other newspapers, perhaps not over a dozen in the country, have ever even attempted printing single full process color pages.

Miller Film Available

Gordon Montgomery, President of Miller Printing Machinery Co., has announced that bookings can now be made for the company's motion picture entitled *Another Man's Business*. The film will be available for showing after May 1. The purpose of the film, according to Montgomery, is "to enable printing craftsmen, students and those interested in the Graphic Arts to better visualize the origin of a printing press." The sound movie in color, has a running time of 20 min. Included are views of the Miller plant and the 21 in. by 28 in. TW two-color press in operation. It may be booked by addressing a request to Advertising Dept., Miller Printing Machinery Co., 1117 Reedsdale St., Pittsburgh 12, Pa.

Seek Graphic Arts Films

The Audio-Visual Aids Committee, American Assoc. of Teachers of Journalism, is searching for motion picture films and film strips on typography, printing processes, engraving processes, photography and the related fields of paper and ink. The committee plans to view and evaluate these films as teaching aids in an annotated bibliography to be published later in the year. Persons in the Graphic Arts knowing of such films are asked to contact Carroll Coleman, School of Journalism, University of Iowa, Iowa City, Iowa.

Craftint Warehouse

Newly established is Craftint Mfg. Co.'s Pacific Coast warehouse at Los Angeles. The branch is manned and equipped to handle sales and Craftint supplies in the western states, western Canada, Alaska and Hawaii.

The Kodak Fluorescence Process

. . . better color reproduction from water-color artwork at lower cost . . .

Color is sales insurance. On book jackets, full-color reproductions from water-color artwork have the eye appeal that turns browsers into buyers. In the display window, on the counter, or on the wall shelf of the book store, full-color book jackets are stop-lights for the buyer's eye.

And full-color plates in the body of the text—especially in children's books—result in added sales appeal to the parents who buy and in treasured appreciation by the children who read.

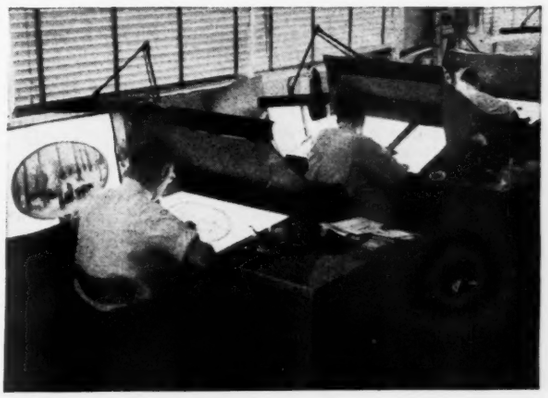
The Kodak Fluorescence Process, with built-in color correction and a complete palette reproducible by standard process color printing inks, means artwork ideally suited for reproduction by any method. These advantages provide publishers and advertisers alike with a way to get better full-color reproduction from water-color artwork —faster and cheaper.

Kodak Fluorescent Water Colors are obtainable from any Kodak Graphic Arts dealer. For full information, stop in at your nearest Kodak Graphic Arts dealer today, or write to Rochester for further information.

This free booklet, giving more detailed information concerning the Kodak Fluorescence Process and its application to your color reproduction work, will be sent you on request. Simply address a letter or postcard to Department 8, Eastman Kodak Company, Rochester 4, N. Y., for your free copy.

Kodak Fluorescent Water Colors are obtainable in sets of twenty colors from your Kodak Graphic Arts dealer. Two sizes are available, quarter-ounce and one-ounce jars. Single colors in either size are obtainable, also.

Kodak Fluorescent Water Colors can be used by any artist familiar with standard water-color techniques. They are handled in the usual manner under normal room illumination.



The automatic color correction built into Kodak Fluorescent Water Colors makes possible color correction in the process camera, limiting costly hand color correction to a minimum.

GRAPHIC ARTS DIVISION

EASTMAN KODAK COMPANY

ROCHESTER 4, N. Y.

"KODAK" IS A TRADE-MARK

Kodak

Conference Dates *(with organization names and principal officers)*

American Photoengravers Association — 1949 Convention and Exhibition, Fairmont Hotel, Nob Hill, San Francisco, September 12, 13, 14. Frank J. Schreiber, Commissioner, 166 W. Van Buren St., Chicago 4, Ill.

ANPA Mechanical Conference—Palmer House, Chicago, Monday, Tuesday and Wednesday, June 6, 7 and 8, 1949. Chairman of the Committee, Edwin H. Evers, Production Manager, St. Louis *Globe-Democrat*. Acting Manager ANPA Mechanical Dept., Vernon R. Spitaleri, 370 Lexington Ave., New York 17, N. Y.

Fifth District Craftsmen's Conference—Hotel Biltmore, Dayton, O., June 17 and 18. Ollie G. Fricke, Fifth District Representative, 43 West Apple St., Dayton, O.; Secretary-Treasurer, John Fisher, Superintendent, Reardon-Parshall Co., 466 Larned St., N. W., Detroit, Mich.

Great Lakes Newspaper Mechanical Conference—Hotel Schroeder, Milwaukee, January 15, 16, 17, 1950. President W. R. Coddington, Composing Room Supt., Youngstown (O.) *Vindicator;* Secretary Al. P. Oberg, Flint (Mich.) *Journal;* Arrangement Chairman J. E. McMullen, Pressroom Supt., Milwaukee *Journal;* Chairman Mfrs. and Suppliers Committee, George Morrison, Morrison Co., 125 W. Melvina St., Milwaukee 12, Wis.

Illinois Newspaper Mechanical Conference—1949 conference to be held in Danville, Ill., dates to be announced later. President, John Orlebeke, Danville (Ill.) *Commercial-News;* Secretary-Treasurer, Wilbur Augspurger, Peoria (Ill.) Newspapers, Inc.

International Association of Printing House Craftsmen—1949 Convention to be held in San Francisco, Palace Hotel, September 4, 5, 6, 7, 1949. President, Gradie Oakes, Process Color Plate Co., 522 So. Clinton St., Chicago 7. Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

International Typographic Composition Association—1949 Convention to be held at Hotel Statler, Boston, Mass., September 22, 23 and 24. Frederick H. Lutz, President, Brockton, Mass.; Frank M. Sherman, Executive Secretary, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference— 1949 Conference, Hotel Hanford, Mason City, Ia., May 14, 15 and 16. President, Ken I. Waughtel, Kayenay Engraving Co., Mason City, Ia.; Secretary, Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald*.

Kansas Newspaper Mechanical Conference — 1949 meeting to be held at Hotel Kansan, Topeka, Kan., October 1 and 2. President Vern Williams, Mechanical Supt., Topeka Newspaper Printing Co., Topeka, Kan.

Lithographers National Association — 1949 Convention to be held at Mission Inn, Riverside, Calif., May 10 to May 13. W. Floyd Maxwell, Executive Director, 420 Lexington Ave., New York 17, N. Y.

Missouri Newspaper Mechanical Conference — 1949 Conference, Hotel Conner, Joplin, Mo., September 10 and 11. President, Paul S. Ginn, Press Foreman, Sedalia (Mo.) *Democrat-Capital;* Secretary-Treasurer, O. K. Hammitt, Mechanical Supt., Moberly (Mo.) *Monitor-Index;* Chairman of Supply Men's Committee, Robert Robinson, Representative, Certified Dry Mat Corp., 9 Rockefeller Plaza, New York 20, N. Y.

National Association of Litho Clubs — Mayflower Hotel, Washington, D. C., April 29-30, 1949. President, Albert Tucker, Sauls Lithograph Co., Washington, D. C.; Secretary William J. Stevens, 317 West 45th St., New York 19, N. Y.

National Association of Photo Lithographers — 1949 convention will be held at Hotel Statler, New York, N. Y., October 19, 20, 21 and 22. Executive Vice President, Walter E. Soderstrom, 317 West 45th St., New York 19, N. Y.; Executive Secretary, William J. Stevens, 317 West 45th St., New York 19, N. Y.

National Graphic Arts Education Association — 24th Annual Conference on Printing Education, Pressmen's Home, Tenn., June 20-23, 1949. John G. Henderson, President; Fred J. Hartman, Educational Director, 719 Fifteenth St., N. W., Washington 5, D. C.

National Graphic Arts Exposition—International Amphitheatre, Chicago, September 11 to September 23, 1950. Headquarters for National Graphic Arts Exposition, Inc., to open as of May 1, 1949, at Room 802, 105 W. Monroe St., Chicago. President, A. E. Giegengack; Secretary, S. Frank Beatty, Graphic Arts Assoc. of Illinois, Chicago. During the period, September 11 to September 23, 1950, a number of Graphic Arts associations will hold their annual conventions as follows: Intl. Assoc. of Printing House Craftsmen, Hotel Stevens, Sept. 10, 11, 12 and 13, 1950; Intl. Typographic Composition Assoc., Sheraton Hotel, Sept. 14, 15 and 16; Printing Industry of America, Palmer House, Sept. 17, 18, 19 and 20, 1950; National Graphic Arts Education Assoc., Hotel Sherman, Sept. 21, 22 and 23, 1950.

National Printing Equipment Association, Inc. — President, R. Verne Mitchell, Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O. James E. Bennet, Secretary, 140 Nassau St., New York 7, N. Y.

New England Mechanical Conference — 1949 Conference, Hotel Statler, Boston, Mass., October 29 and 30. President, George F. Marshall, Mechanical Supt., Portland (Me.) *Press-Herald-Express*. Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day*.

Northwest Mechanical Conference — 1950 Conference, Hotel St. Paul, St. Paul, Minn. Tentative dates, March 10, 11, 12. President, Joseph J. Cory, Chief Composing Room Machinist, St. Paul (Minn.) *Dispatch* and *Pioneer Press*. Secretary-Treasurer, Ralph Carson, Dunwoody Industrial Institute, Minneapolis, Minn.

Pacific Mechanical Conference — Roosevelt Hotel, Hollywood, Calif., May 20, 21, 22, 1949. President, Harold Winn, Hollywood *Citizen-News;* Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles, *Daily News*.

Pacific Society of Printing House Craftsmen — Annual conference in connection with International convention at San Francisco. Society session scheduled for Palace Hotel, Sunday, September 4, 1949. Secretary-Treasurer, R. W. Hardy, 71 Columbia St., Seattle 4, Wash.

PNPA-NJPA Joint Mechanical Conference — Penn Harris Hotel, Harrisburg, Pa., April 1 and 2, 1949. Paul V. Driscoll, Mechanical Supt., Connellsville (Pa.) *Courier*, Chairman of the PNPA Mechanical Committee is in charge of the arrangements. Thus the states of Pennsylvania and New Jersey will be represented by one conference; executives from Delaware and Maryland (which states have no conference) are also invited to participate in the joint meeting in Harrisburg.

Printing Industry of America — Hotel Biltmore, Los Angeles, November 14-17, 1949. James R. Brackett, General Manager, 719 Fifteenth St. N. W., Washington, D. C.

SNPA (Eastern Div.) Mechanical Conference — Atlanta Biltmore Hotel, Atlanta, Ga., August 29 and 30, 1949. Chairman, Luther Wright, Mechanical Supt., New Orleans (La.) *Item;* Secretary, Tom Tanner, c-o SNPA, P.O. Box 1569, Chattanooga 1, Tenn.; Chairman of Supply and Equipment Group, Owen W. Asbell, Ludlow Typograph Co., representative in Atlanta, Ga.

SNPA (Western Div.) Mechanical Conference—Chairman, George N. Guthrie, Pressroom Supt., Little Rock (Ark.) *Gazette;* Secretary, C. W. Tabb, 723 Texas Bank Bldg., Dallas, Tex. 1950 Conference dates and meeting place to be determined later by Executive Committee.

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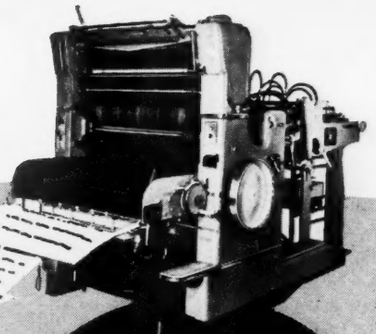

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Patents

For The GRAPHIC ARTS

Covering patents issued January 18, January 25, February 1 and February 8.

Binding, Cutting, Perforation

During the four weeks covered by this report, no patents have been issued for this heading.

Composing Room Equipment

During the four weeks covered by this report, no patents have been issued for this heading.

Feeding, Folding, and Delivery

2,460,694. A HYDRAULIC AND PRESSURE CONTROL SYSTEM is used to automatically maintain the pressure on the rewind rolls of a slitting and rewinding machine for paper webs. The arrangement obviates the difficulties involved in dealing with the slack edge effect automatically encountered when a web of paper is slit, i.e., whether they result from unevenness in expansion characteristics which may develop during paper manufacture or differences in degree of moisture exposure. The rewind rolls are arranged in groups, the rolls of each group being in spaced side by side position and the rolls of one group being staggered with respect to the rolls of an adjacent group. A winding drum is used for each group of rewind rolls and each winding drum has sectioned portions individually supporting the component rewind rolls in each group respectively. Differential gearing connects the sectioned portions of the winding drums so that the sectioned portions are actuated differentially to compensate for differences in tension on the slit webs. Invented by Henry L. Haswell, Brevard, N. C. Assigned by mesne assignments to Ecusta Paper Corp., Pisgah Forest, N. C. Application August 8, 1945. 16 claims.

2,460,876. SHEET RECEIVING AND ALIGNING BIN is provided with a jogger which properly stacks sheets delivered to the bin so that the edges of the stack are in the same plane regardless of how the sheet is delivered into the bin, whether it be sideways, or at an angle, too far forward, or the timed sequence is wrong. The invention is aplicable in the printing art particularly to printing presses and manifolding or collating machines wherein sheets are manifolded, as for use in price books. Jogger includes a pair of spaced-apart parallel rollers overlying the bin and extending the length of the bin. Both rollers are rotated simultaneously and in opposite directions. A sheet delivered off-center to the bin will contact one of the rotating rollers and be directed into the bin. Invented by Albert Dager, Los Angeles, Calif. Assigned one-half to Elias Shaheen, Los Angeles, Calif. Application December 27, 1946. 3 claims.

2,461,376. SHEET STRETCHING MECHANISM finds use in the stretching or tightening of sheets which have just been printed and on which ink or colored pigments are still moist, and which prevent the use of an ordinary roller such as could be used for pressing plain sheets of paper flatly upon a drum or other moving surface. Adjoining the drum a rock shaft is positioned so as to be free to rotate. Sleeves are slidably positioned on shaft and wheel mountings are secured to sleeves. A rubber tired wheel is in the mounting of each sleeve, the rubber being soft enough to grip the paper by application of moderate pressure. Wheels may be canted against the drum to grip sheet material thereon at its lateral edges to stretch the sheet material flatly and tautly on the surface of the drum. At least one wheel is adjustable along the rock shaft to accommodate printed material of different widths. Invented by Frank Feldmeier, Pittsburgh, Pa. Assigned to Blaw-Knox Co., Pittsburgh, Pa. Application May 28, 1947. 3 claims.

Miscellaneous

2,460,998. METHOD OF COATING PAPER. Wet rub resistant printing

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

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papers, lithographic papers, and washable wall paper stock may be coated according to this method. The method comprises coating paper in a wet way with a coating color composition comprising an acid deflocculated clay and a starchy polysaccharide film forming binder. Acid catalysts, such as acetic and lactic, etc., may be used to catalyse the reaction between the binder and its solubilizing agent. The paper is dried to set the coating and it is then treated with a solution of a partial condensation product of melamine and formaldehyde. It is heated to insolubilize the resultant coating. Invented by Harley E. Nelson, Park Ridge, Ill. Assigned, by mesne assignments, to Stein, Hall & Co., Inc., New York, N. Y. Aplication March 20, 1944. 3 claims.

Plate Making

2,461,151. STEREOTYPE PLATE CASTING BOX. Casting box for stereotype plates comprises, in combination, a complemental pair of hollow shells presenting generally semi-cylindrical inner faces which are adapted to receive a mat. A novel arrangement is disclosed for holding a mat in position by a vacuum. Intercommunication is established between the chambers of the two shells through a specially constructed hinge mechanism that joins them. The mechanism comprises a pintle engaged by interleaved gudgeons integral with respective ones of the two shells. Passages are provided in the pintle and in certain of the gudgeons for establishing pressure equalizing intercommunication. Means are also provided for a connection between interconnected chamber and a vacuum pump. Invented by Frank A. Foster, Melrose Park, Ill. Assigned to The Goss Printing Press Co., Chicago, Ill. Application May 17, 1946. 5 claims.

Printing Inks and Related Chemicals

2,459,149. ANTHRAQUINONE COMPOUNDS of invention can be applied to fabrics by known dyeing or printing methods. One product, i.e., 1-methylaminoanthraquinone is prepared by heating together 122 grams of 1-chloroanthraquinone, 500 grams of pyridine, 148 grams of a 25 percent solution of methylamine in water and 1 gram of cupric acetate in a shaking autoclave at 130° C. for six hours. The autoclave is then cooled to room temperature and its contents poured into two liters of water. The reaction mixture is filtered, washed with water and dried. 1-methylaminoanthraquinone melting at 167° is obtained with a yield of about 95 percent. Invented by Harry W. Coover, Joseph B. Dickey, and Edmund B. Towne, Rochester, N. Y. Assigned to Eastman Kodak Co., Rochester, N. Y. Application June 1, 1945. 2 claims.

2,459,222. INTRODUCTION OF AMINO GROUPS INTO CELLULOSE. Sodium hydroxide solutions containing 2-aminoethylsulfuric acid may be used to print patterns on fabrics and when the fabrics are then dyed with a basic dye like methylene blue and then with an acid dye like Kiton fast red, two-colored printing results. When the fabric is then treated with sodium dichromate, it becomes rot and water resistant. The process of the invention comprises wetting a cellulose fabric with an aqueous solution of sodium hydroxide containing 2-aminoethylsulfuric acid. The fabric is then heated from 70 to 110° C. for forty minutes to nine hours. It is then washed to remove sodium hydroxide. Nitrogen up to 0.60 percent is readily introduced by this procedure and the treated fabric dyes darkly and fast with acid wool dyes. A dark fast brown shade is obtained by adding 0.5 N potassium permanganate acidified with acetic acid. Invented by John D. Guthrie, New Orleans, La. Assigned to the U. S. A. as represented by the Secretary of Agriculture. Application June 13, 1947. 5 claims.

2,459,289. BASIC ALUMINUM SALT SOLUTIONS. The activated aluminum hydroxide preparations of this invention are useful in printing mordant compositions for textiles. The invention is based on the discovery that neutral magnesium sulphate produces unusual effects when added to many preparations containing aluminum hydroxide plus acids, such as boric, glycolic, maleic, acetic, formic, etc., or when added to aluminum salts. The sols or jellies are rich in aluminum hydroxide and low in acid content and are of value for many purposes. Invented by Victor H. Roehrich, St. Paul, Minn. Unassigned. Application March 24, 1945. 3 claims.

2,459,366. ACID TREATMENT OF PYRANTHRONE VAT DYESTUFFS. The principal advantage of the invention is the ability to produce products of

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very small particle size suitable for pigment padding processes and for printing purposes. The dyestuff may be converted into very finely divided particles by forming a slurry of the dyestuff with 20 to 40 parts of sulfuric acid of such concentration that at the reaction temperature at least a part, but not more than 10 percent of the total dyestuff, is in the solution at any one time. The slurry is stirred until conversion of the dyestuff to the insoluble sulfate is practically complete and sulfate is then hydrolyzed to the dyestuff. Invented by John F. Cullinan and Lawrence D. Lytle, Plainfield, N. J. Assigned to American Cyanamid Co., New York, N. Y. Application March 13, 1944. 8 claims.

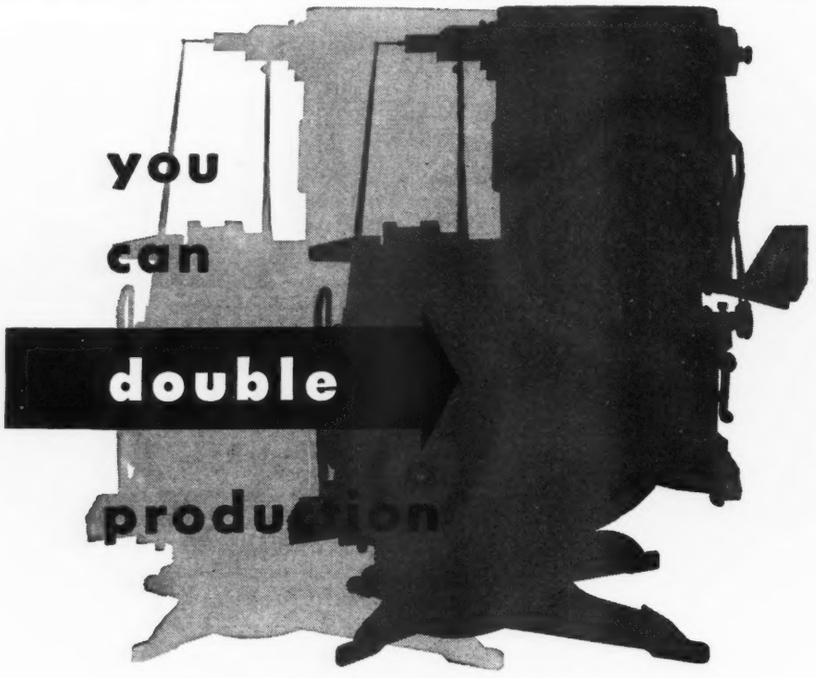
2,459,424. ANTHRIMIDE CARBAZOLE DYESTUFFS are for printing textiles. Although they contain acylamino groups, they are well suited for conversion to leucosulfuric acid esters. One compound is prepared by mixing 39.6 parts of 1-benzoyl-amino-5, 8-dichloroanthraquinone, 50 parts of 1-amino-anthraquinone, 25 parts of sodium carbonate, 2 parts of cuprous chloride and 400 parts of naphthalene. The mixture is heated for 15 hours until the naphthalene boils. It is then cooled to about 130° C. and 800 parts of chlorobenzene are added. The well crystallized product is then filtered off at 50° to 55° C., washed with chlorobenzene, the pressed mass steam-distilled and the new compound is isolated by filtration. It dissolves in concentrated sulphuric acid to a green solution. Invented by Hermann Hauser, Binningen, and Max Bommer, Riehen, Switzerland. Assigned to Swiss firm of Ciba Limited. Application April 20, 1943; in Switzerland April 18, 1942. 2 claims.

2,459,467. POLYAZO BENZIDINE DYES. The dyestuffs are suitable for dyeing and printing wool, silk, leather, cotton, linen, rayon and staple fibers from regenerated cellulose. A process for the manufacture of a trisazo dyestuff comprises coupling tetrazotized 3-hydroxy-3′-methoxy-4:4′-diaminodiphenyl. This is done first with one molecular proportion of the monazo dyestuff from diazotized 2-amino-1-hydroxy-benzene-4-sulfamide and resorcinol and afterwards with one molecular proportion of 1-(4′-hydroxy-3′-carboxyphenyl)-3-methyl-5-pyrazolone. Invented by Fritz Straub, Kaiseraugst, near Basel, and Jakob Brassel, Basel, Switzerland. Assigned to Ciba Limited, Basel, Switzerland. Application August 23, 1943; in Switzerland September 2, 1942. 15 claims.

2,459,941. ANTHRAQUINONE VAT DYESTUFFS of invention are obtained by causing anthraquinone dicarboxylic acids containing at least two carboxyl groups of which at least one is in beta position, or their reactive derivatives, to react with amines of which at least one amine contains a radical consisting of at least two rings. Products obtained by the process are vat dyestuffs and can be used in known manner for dyeing and printing various animal, and particularly vegetable, fibers. They can also be converted into leuco ester salts, for example of sulfuric acid, and used in this form for dyeing and printing. Invented by Theodor Holbro, Basel, Walter Kern, Sissach, and Paul Sutter, Basel, Switzerland. Assigned to Ciba Limited, a Swiss firm. Application June 2, 1944; in Switzerland June 24, 1943. 4 claims.

2,460,233. ESTERS OF SULFOLENE HALOHYDRINS. 4-chloro-3-sulfolanyl and 4-(3-chloro-2-sulfolenyl) esters of fatty acids have special advantages in many industrial applications. Some of the halosulfolanyl and halosulfolenyl esters of saturated monocarboxylic acids are valuable plasticizers for cellulose plastics and others are plasticizers for synthetic rubbers and resins. Corresponding esters of unsaturated carboxylic acids are capable of polymerizing to produce useful resins and plastics. Products are useful in insecticidal, germicidal and fungicidal compositions. Those containing sulfate or sulfonic groups can be employed as wetting agents and have advantageous applications in the preparation of printing inks and anti-corroding paints. Invented by Rupert C. Morris, Berkeley, Edward C. Shokal, Oakland, and John L. Van Winkle, San Lorenzo, Calif. Assigned to Shell Development Co., San Francisco, Calif. Application October 22, 1945. 7 claims.

2,460,255 and 2,460,256. ALLYL ETHER OF ANACARDIC MATERIALS. Patent 2,460,255 claims a resinous organic reaction product of formaldehyde and an aldehyde-reactive resinous composition produced by heating allyl ether with cashew nut shell liquid. Organic peroxides are used. Products are suitable for impregnating asbestos-brake linings; as extenders, vulcanizers, etc.; as coatings for paper, metal, glass, etc.; in adhesives and inks, etc. Carbon black and other pigments are used in examples along with drying oils and



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semi-drying oils. Allyl ether of cashew nut shell liquid is claimed in patent 2,460,256. Invented by Mortimer T. Harvey, South Orange, N. J. Assigned to The Harvel Corp., a corporation of N. J. Applications December 1, 1944 and January 8, 1945, respectively. 10 and 13 claims, respectively.

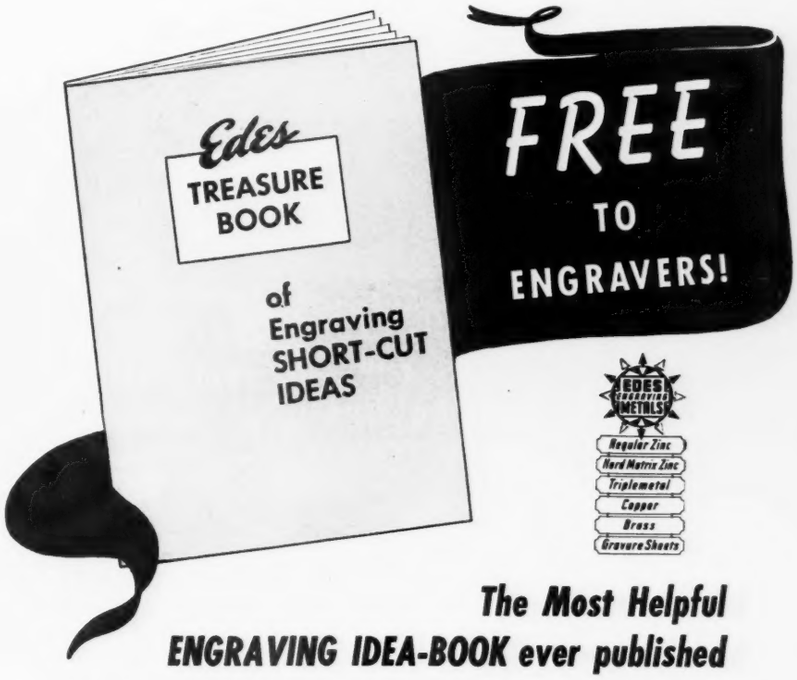
2,461,502. CYANOETHYL ETHERS OF GALACTOMANNAN AND GLUCOMANNAN GUMS. A process of making a cyanoethyl ether of a gum selected from the group consisting of galactomannan and glucomannan gums comprises condensing an alkaline dispersion of the gum with an acrylonitrile at about room temperature and within the approximate proportions of about 2.5 to 5 moles of acrylonitrile per anhydro sugar unit. Cyanoethyl ethers of guar gum and of locust bean gum are claimed. The products have film forming properties, may be used as thickening agents in general and as sizing and finishing agents. They may serve as protective colloids; dispersions or emulsions are stabilized by their presence. Invented by Owen A. Moe, Minneapolis, Minn. Assigned to General Mills, Inc., Minneapolis, Minn. Application April 25, 1946. 8 claims.

Printing Presses and Equipment

2,459,188 and 2,459,189. DUCTOR ROLLER SONTROL for printing presses of the Miehle and other cylinder type is disclosed. In patent 2,459,188 a brake shoe is arranged to contact the shaft of the ductor roller during a portion of its movement between the ink table and fountain roller and to apply a pressure thereto under control of a compression spring. Rotation is arrested so that roller touches the fountain roller at a different point, for example, one-third of a complete rotation from its previous contact for each cycle of operation. This distributes the ink evenly on ink table and eliminates uneven distribution of ink. Time during which brake shoe is acting on ductor roller shaft is adjustable and hence the amount of rotation of ductor roller is adjustable. Patent 2,459,189 discloses a mounting for the brake shoe whereby it can be swung clear of the ductor roller shaft into a collapsed or folded-out-of-the-way position or held in operative position with respect to the ductor roller shaft. The invention provides for releasably securing the brake shoe assembly in either position. Invented by George H. Schultz, Elmsford, N. Y. Unassigned. Applications June 12, 1945, and March 25, 1946, respectively. 3 and 7 claims, respectively.

2,459,622 and 2,459,623. METHOD OF AND APPARATUS FOR DRYING SHEET MATERIALS BY HIGH-FREQUENCY ELECTRIC FIELDS. Printed ink impressions on a traveling web in a printing press may be dried by method and apparatus disclosed. Patent 2,459,622 describes the utilization of electric fields between a rotating electrode system in which electrodes are embedded in dielectric material so that the surfaces of the electrodes which are in contact with the material being treated are flush with the surface of the dielectric material. Electrodes are connected alternately to the ground and a source of high frequency energy by means of a pickup coil. Apparatus of patent 2,459,623 includes a rotatable insulating support, two pairs of metallic conducting rings mounted on the periphery, a plurality of electrodes disposed in parallel spaced relation about said periphery and connected alternately to the opposite rings of each pair. Surfaces of electrodes are exposed to atmosphere. Means are provided for supplying high frequency alternating current to the electrodes. Invented by Wallace P. Cohoe, Riverdale-on-Hudson, and Mitchell Wilson, New York, N. Y., and Wallace P. Cohoe and Max R. Saslaw, New York, N. Y., respectively. Assigned to Fred'k H. Levey Co., Inc., New York, N. Y. Applications March 18, 1944, and May 5, 1945, respectively. 15 and 14 claims, respectively.

2,459,922. LIQUID FEED CONTROL is adapted to a printing press having an ink feed carriage movable to and from printing position and a transfer cylinder for transferring ink to a web. Each of a number of feed arrangements on the carriage includes an ink source, at least one distributing roll, and a device movable independently of the carriage for delivering ink from source to the distributing roll. A double-acting air motor controls operation of delivery device. Motor is controlled by a solenoid-operated valve for preventing operation of delivery device during periods of operation of the ink transfer apparatus when ink transfer is not desired. Invented by Curtis S. Crafts, Oak Park, Ill. Assigned to Goss



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Printing Press Co., Chicago, Ill. Application December 27, 1946. 12 claims.

2,460,059. SIPHON APPARATUS FOR HEATED ROLLS is intended to exhaust the condensate from the interior of the roll or drum. Siphon mechanism is provided with an appropriate rotary steam joint, having a steam admission pipe and an exhaust pipe through which condensate is withdrawn from roll. At the inner end portion of the siphoning mechanism a bearing and supporting structure, located in the midsection of the roll, acts to hold the inner portion of the siphon mechanism accurately and securely in proper operating position. Mechanism is applicable to steam heated rolls used in paper corrugating machinery, as drier rolls, and for similar purposes. Invented by Hobart W. Bruker, Bordentown, N. J. Assigned to George W. Swift, Jr., Inc., Bordentown, N. J. Application September 11, 1946. 4 claims.

2,460,184. INK FOUNTAIN FOR INTAGLIO PRINTING PRESSES. Invention embodies improvements in enclosed ink fountains for the inking mechanism of rotary intaglio printing presses. A horizontally disposed pipe is provided for supplying ink under pressure to a pivotally suported inker head, the ink supply pipe serving as the pivotal support for the inker head. Either end of pipe may be connected with ink supply line. A deflector is located across the fountain in position to redirect the ink thrown or dropped from the printing cylinders and thus fill any depressions or blank spots thereon. Invented by Joseph E. Meyer, Westerly, R. I. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application February 1, 1945. 3 claims.

2,460,504. PRINTING CYLINDER OF A PRESS, especially presses of the electrical action type disclosed in patent 1,820,194 and 2,224,391, can be quickly and easily removed from and replaced in the same predetermined position or interchanged with another printing cylinder in the apparatus, according to this invention. The cylinder is removed and replaced in a direction lengthwise of itself from the operator's side of the press. The cylinder and its supporting means are arranged so that cylinder is detachably connected at its inner or far end with a driving support, and at operator's end is provided with a rotatable end support which is releasable and when released is movable away from its operative position opposite the end of cylinder to provide clearance through which cylinder is removable endwise or in the direction of its length from the press. Invented by William C. Huebner, New York, N. Y. Unassigned. Application October 24, 1944. 13 claims.

2,460,927. SPEED CONTROL FOR ELECTRIC MOTORS. Control system is of particular advantage for the control of motor driven printing presses which must be operated at accurately maintained speeds even though the load varies. The system includes two motors, one of which is provided with

Bond Paper Curl

(Abstracted from Research Bulletin published by the Lithographic Technical Foundation.)

QUESTION: Would you know why the letterheads that we have been printing on bond paper curl across the grain after printing? All paper is tested before going to press and if necessary is hung and equalized to the 50 per cent R. H. of the pressroom.

Answer: It is a type of structural curl caused by relief of strains produced in the paper by its being dried and calendered under tension. After being cut into sheets the paper may lie flat, but when it is printed excessive press moisture will relieve the strains in the paper fibres on the printed sides allowing them to contract and causing the sheet to curl. If press moisture is kept to a minimum, this type of curl usually is not too troublesome. Once a job curls, however, the only possible corrective is to run it through the press again, printed side down, using a blank plate, and attempt to apply the same amount of moisture to the reverse side of the sheet as was applied during printing.

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regulating means which affords only a limited number of speed points within the range of speeds required. A second smaller motor supplies supplemental power so as to afford joint operation of the two motors at any desired speed intermediate any two speed points provided by the regulator for the large motor. The small motor is limited to a small fraction of the power delivered by the large motor and variations in the load of the small motor are employed to effect control of the large motor. Invented by William H. Elliot, Shorewood, Wis. Assigned to Cutler-Hammer, Inc., Milwaukee, Wis. Application October 26, 1944. 9 claims.

2,461,440. HOLDING DEVICE is used to hold a printing frame, releasably, in an elevated position relative to a printing base to which the frame is hinged along one side. Frame carries a silk screen. Device comprises an elongated metal support which is fixedly attached to one side of the frame by screws and a holding element in the form of a straight bar which is supported for pivotal and translatory movement relative to the support. Holding element is slidably supported upon an arm which is pivotally mounted on the support by a pivot pin. A spacing sleeve embraces the pivot pin and a flanged slide is riveted to the holding element. A helical spring is provided to alternately pivot the holding element toward holding and non-holding positions. For the purpose of tensioning the spring to effect a pivotal movement of holding element from holding to non-holding position, a second arm is provided. Invented by Wesley Petty, Effingham, Ill. Unassigned. Application July 19, 1945. 13 claims.

Letters Acknowledge CARE Packages Sent

From the hearts and homes of deeply-touched people in Europe are coming letters of gratitude for CARE packages provided by printers and lithographers of the U. S. and Canada, according to The Printers' and Lithographers' International Relief Committee.

Typical letters read in part like this one received by H. A. Porter, Vice President in Charge of Sales, Harris-Seybold Co., ". . . Like a gift from heaven it came to my numerous and orphaned family in these Holy days." From a printer in Germany, G. A. Groettum, Vice President of the Jensen Printing Co., Minneapolis, received a letter in which the recipient wrote: "Such things can sometimes also be bought in Germany, but at prices beyond the reach of a bookprinter like me. . ."

Lee Augustine, Chairman of the Relief Committee stated, "The committee will continue to carry out its relief program as long as the need for aid is necessary." Serving on the committee are D. A. Boyd, J. M. Callahan, J. H. Deviny, Alex Dittler, A. E. Giegengack, Clarence Groettum, F. W. Hoch, G. J. Holmquist, Frank McCaffrey, L. A. Neumann, A. G. Ruiter, A. R. Tommasini and P. R. Long.

Remittances of $10 or multiples thereof, should be made out to CARE but sent to The Printers' and Lithographers' International Relief Committee, P. O. Box 1422, Cincinnati 1, O. A business card or letterhead should be attached.

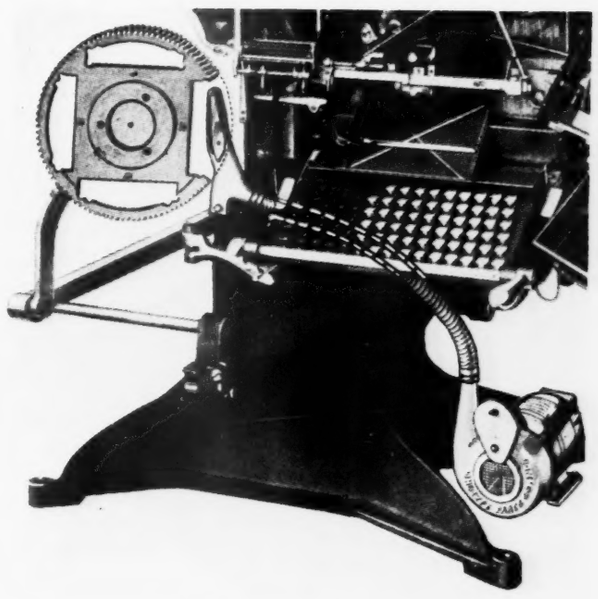
Morrill Fleet Expands

Seven high-powered tank trucks have been added to the delivery fleet of the Geo. H. Morrill Co., Div. of Sun Chemical Corp., according to a recent announcement by Ralph C. Persons, General Manager. The Morrill fleet, now comprised of 31 such trucks, operates from factories and news ink supply stations throughout the United States.

Visit Monotype School

The Lanston Monotype Machine Co. played host recently to a group of printers and educators at the newly equipped Monotype School for keyboard and caster instruction. The group, headed by President John S. Williams and Executive Secretary Harold F. Fiedler, of Printing Industries of Philadelphia, inspected the facilities of the school. In addition, they were conducted through various sections of the factory by Monotype President, Joseph F. Costello.

Hold Production to Schedule



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- **Motor operated, directs blast of cooling air onto back of mold—carries away heat**
- **Saves time lost waiting for mold to cool unaided**
- **Overcomes cause of porous, weakened slugs that later make trouble in pressroom**
- **Makes molds and discs more resistant to warping**
- **Easily installed on any Linotype or Intertype**
- **Indispensable on quadder-equipped machines**
- **Write for folder giving more information**

ACE BELTS *drive away all (belt) care*
Minimum year's wear guaranteed

PRECISION TRADE ★ MARK

LINOTYPE PARTS COMPANY
INCORPORATED
Factory and Main Office SOUTH HACKENSACK, N. J.
Branch Office 1327 BROADWAY KANSAS CITY 6, MO
CHICAGO · MINNEAPOLIS · DENVER · NEW YORK · BOSTON

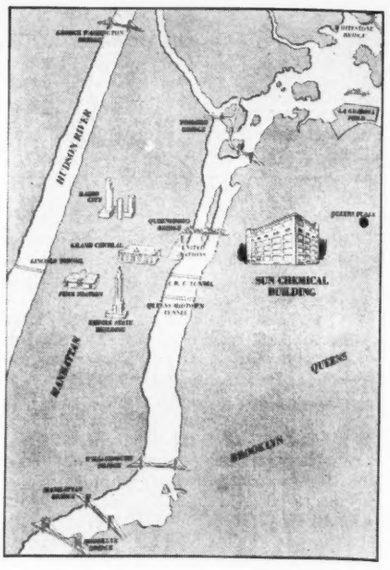
Printing Education Conference Speakers

The 24th Annual Conference on Printing Education of the National Graphic Arts Education Assn. will listen to outstanding speakers from the printing industry during a four-day conclave. These will include Carl E. Dunnagan, President of PIA; Wade E. Griswold, Director of LTF; Colonel E. W. Plamer, Kingsport Press, Kingsport, Tenn.; and George Welp, IPI, as well as leaders in the educational field.

The conference is to be held at the new Technical Trade School, Pressmen's Home, Tenn. on June 20 to 23. A varied program is being scheduled for those who will attend. Arrangements are in charge of a committee appointed by John G. Henderson, President of the Association. The committee consists of Thomas E. Dunwody, Director, Technical Trade School; C. Harold Lauck, Journalism Laboratory Press, Washington and Lee University; and Fred J. Hartman, Educational Director of the Association.

Dayton Annual Report

The 43rd Annual Report to the stockholders of The Dayton Rubber Co. was recently published in two colors. The 28 page report contains numerous photographs of the company's buildings, products and employee activities. Also included are diagrams indicating the financial status of the company for the benefit of the stockholders. In a section devoted to Research and Development, the report notes the progress made in the products which Dayton manufactures for the printing industry. These include rollers used in newspaper, letterpress, magazine, and offset plants, ink fountain color separators and dividers, and press blankets.



Morrill Moves to Larger Quarters—Ralph C. Persons, General Manager of Geo. H. Morrill Co., Div. of Sun Chemical Corp., has announced the removal of the company's main office from 100 Sixth Ave., New York, N. Y., to the Sun Chemical Bldg. located at 10th St. and 44th Ave. in Long Island City 1, N. Y.

Lead Market Breaks

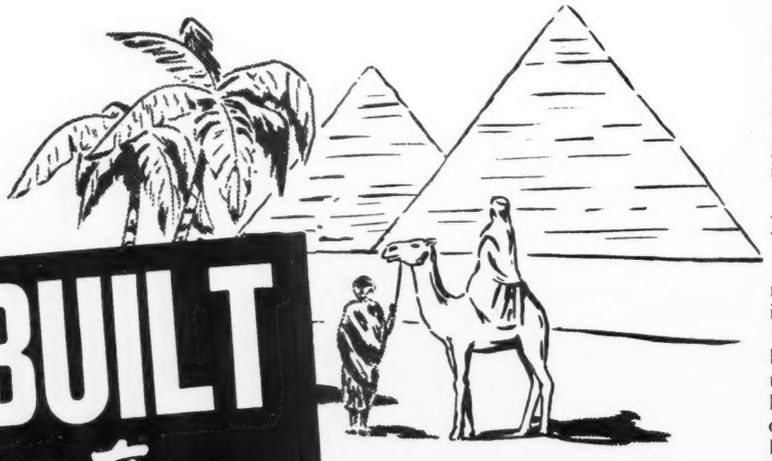
Of interest to type metal users is the news that the price of lead declined early in March. It went from 21½c per lb. to 19½c per lb. This represents the first break in the non-ferrous metal market in the past eight years. The demand for lead so far this year, it is reported, has diminished because manufacturers of wet batteries have not been in the market for lead during the first quarter of 1949.

Sales Office Opened

E. B. Davis, Vice President, Ideal Roller & Mfg. Co., Inc., has announced the opening of the twelfth sales office in the Ideal organization in Rochester, N. Y. The new office is to be in charge of Joseph O'Brien. He formerly served as a

Joseph O'Brien, in charge of Ideal's sales office, Rochester, N. Y.

Sergeant Major in the U. S. Army before joining Ideal in 1947. He received his sales training with that company and will handle the western section of the New York territory. Address of his headquarters is 703 Temple Bldg., Rochester 4.



BUILT to LAST

and so are --

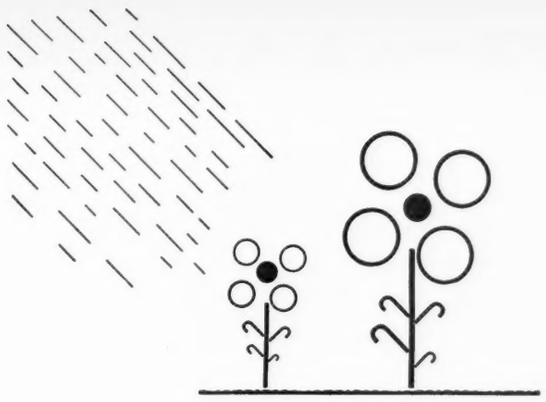
No . . . AMERICAN Summer Composition Rollers won't endure like the ageless pyramids. But . . . this summer when scorching weather bakes your shop, you'll be mighty glad if these doubly durable rollers are on your presses. They're *pre-conditioned* for summer service. Capable, dependable, hot day after hot day. They give service because we built service into them. They l-a-s-t because they're skillfully constructed to last, despite the toughest weather. See for yourself. Order now for the hot season that's coming.

American Rollers

ORDER NOW!

COMPOSITION
LITHOGRAPH
SYNTHETIC RUBBER

AMERICAN ROLLER COMPANY
1342 NORTH HALSTED STREET — CHICAGO 22, ILLINOIS
225 NORTH NEW JERSEY STREET — INDIANAPOLIS 4, INDIANA



April showers bring May flowers. Just as surely, the high quality of Johnson Inks helps you produce fine printing at lowest cost.

CHARLES ENEU Johnson AND COMPANY

GOOD INKS SINCE 1804

10th and Lombard Streets,
Philadelphia, Pa.

NEW YORK • CHICAGO • BOSTON
• ST. LOUIS • CLEVELAND • DETROIT • BALTIMORE • KANSAS CITY • PITTSBURGH • ATLANTA • DALLAS

Specifications and Uses

Bandmaster accommodates any size sheets from 2" x 2½" to 12" x 21"; applies adhesive ⅛" to ¾" from edge of sheet; gumming widths from 2" to 12"; highly practical for tip-ons and wrappers for

Catalogs
Newspapers
Greeting Cards
Cans
Boxes
Books

Constructed almost entirely of aluminum; easily cleaned; light; sturdy.

Unskilled operators average 900 pieces per hour on typical catalog wrapping. One Printer writes: "It now takes only 40 operators to do the same amount of work that previously required 100 workers."

Every Bandmaster is fully guaranteed; complete satisfaction or full refund.

CUT LABOR COSTS 49%

on BANDING
WRAPPING
TIPPING

with the new automatic high-speed

Bandmaster EDGE-GUMMER

$110 complete, delivered anywhere in U.S.A.

The only practical hand-operated machine that automatically applies adhesive to one edge of a sheet of paper (or other material) *while the work proceeds.* Eliminates costly pre-gumming, hand fanning, brushes, glue and paste pots. Inexperienced operators reach full production within one hour. Completely guaranteed.

SEND COUPON TODAY

FIHE ENTERPRISES
1023 Victory Place
Burbank, Calif.

FIHE ENTERPRISES
1023 Victory Place — Dept. P
Burbank, California

Gentlemen: Please send folder and complete details on Bandmaster Edge Gummer.

Firm_____

Address_____

City_____ State_____

By_____

Cloth Newspaper Ad

The Chicago Sunday *Tribune* on February 27 published what is believed to be the first newspaper page ever printed on cloth as a full page advertisement for a new non-woven cleaning fabric. Rolls of the cloth were placed on the *Tribune* presses and printed with regular news ink. The advertising message was carried on both sides of a full page sheet. Housewives were advised to rinse out the page in warm, soapy water to remove the printing ink to get a clean, new dust cloth. The cloth is made up of tiny rayon fibres, each of which is coated with cellulose. These fibres are bonded together with a cellulose binder, leaving millions of microscopic holes between them. As a result, dirt or ink goes into the holes instead of into the fibres, and when rinsed, the dirt washes out of the holes in the fabric.

Opens Doors to Visitors

Robert H. Caffee, President of William G. Johnston Co., Pittsburgh printers, opened the doors of the plant recently to local visitors. The event primarily consisted of a planned plant tour of the departments and operations of the plant to acquaint visitors with facilities available. New equipment, installed since the war, was given special emphasis. Students from local college advertising and printing classes were also entertained. Nearly a thousand visitors from the Pittsburgh tri-state area were in attendance, and each was presented a souvenir booklet in which the event was summarized.

dependability

Stereotypers want a mat they can depend upon. They want uniform shrinkage, unvarying high quality, consistent behavior. Burgess Chrome Mats meet these requirements.

Extreme care in manufacture is responsible for Burgess' dependability. Constant control of every stage of production is maintained. Frequent tests and checks are made, and no deviation from rigid standards is permitted. That's why Burgess Chrome Mats are the best obtainable—why they are the choice of stereotypers.

A Laboratory Product BURGESS Chrome MATS

BURGESS CELLULOSE COMPANY

Manufacturers and Distributors of Burgess Chrome and Tone-Tex Mats

FREEPORT, ILLINOIS

Equipment and Supplies

(Continued from Page 50)

Ferric Chloride Booklet

A MANUAL on the properties, uses and methods of handling ferric chloride entitled *Anhydrous Ferric Chloride* has been prepared by Pennsylvania Salt Mfg. Co. for distribution among engineers, superintendents and executives in the industry where the chemical is applicable. The 12 page, 7½ in. by 8¼ in. bulletin lists and comments on the most important uses of ferric chloride. In connection with the use of the chemical in the photoengraving industry sponsor states, "A crystal clear Ferric Chloride solution of proper density and composition is used for etching copper plates in the photoengraving and rotogravure processes. For this purpose a clear filtered solution is essential. It must be packaged in clean carboys and once opened should be promptly stoppered to avoid contamination from solid matter, dust, and lint." Information on Pennsalt's two commercial forms of the product, listing their characteristics and equipment recommended for use, is presented. Copies may be obtained by addressing requests to Pennsylvania Salt Mfg. Co., in care of *Printing Equipment Engineer*.

Aluminum Welding Alloy

AN ALLOY for joining thin aluminum at temperatures below the melting point of aluminum called Eutecrod 900X has been developed by Eutectic Welding Alloys Corp. Eutecrod 900X is an aluminum alloy used with Low Heat Eutector Flux 900X. Eutectic claims the unusually low heat at which this alloy is applied makes it desirable for the manufacture of all light gauge aluminum parts, tubing, sheet, bands, shapes, without distortion.

Eutecrod 900X is available in 3/64 in. and 1/32 in. coil form. It bonds at 900 deg. F. and remelts at 950 deg. F. It has a tensile strength of 30,000 p.s.i. and is used with corresponding Eutector Flux 900X for lowest heats of application. Manufacturer states direct contact of the heat source is not required so that all possibilities of warping or melting base metal are avoided.

Additional information on this low heat aluminum welding alloy is available by writing Eutectic Welding Alloys Corp., in care of *Printing Equipment Engineer*.

Glue Melting Units

TWO bulletins have been recently released by Sta-Warm Electric Co. Described are the Sta-Warm thermostatically controlled glue pots and the Sta-Warm glue melting tanks. The glue pots are available in either the deep style or in the shallow bookbinders' style.

HERE'S A HELPFUL HINT ON PERFORATING

From Conrad Printing Company of Tacoma, Washington

"A trick I've found to be of great value on perforating jobs is the use of a below type perforating rule used as follows:

Using Cromwell Special Prepared Tympan, make ready as usual, all but the perforating rule. Then with a piece of sticky back tape (used to mount cuts) fasten a piece of zinc or brass to the Cromwell Tympan for the perforating rule to cut on. You get a clean, flat laying perforation on platen or cylinder."

Byron J. Evans
Pressroom Foreman

CROMWELL TYMPAN USERS KNOW

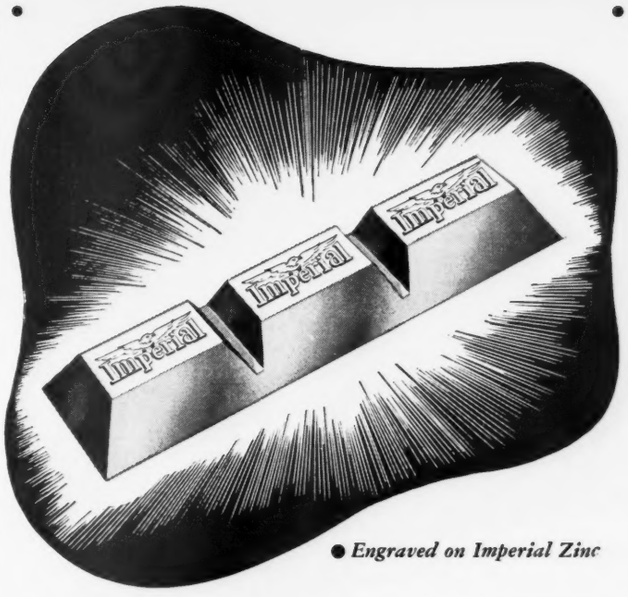
there is no substitute for quality . . . they know the "tricks of the trade," too!

Pressroom foremen like Mr. Evans *know* how to get quality results. That's why they specify Cromwell Special Prepared Tympan. Cromwell Tympan gives them calipered uniformity, high tensile strength and absolute resistance to oil, moisture and atmospheric changes. And Cromwell Tympan is UNCONDITIONALLY GUARANTEED!

"DON'T SAY 'TYMPAN'. . . SAY 'CROMWELL'!"

Write for FREE working sample, giving sheet size desired, and make of press.

The CROMWELL Paper Company
4801-4833 South Whipple Street
Chicago 12, Illinois



● *Engraved on Imperial Zinc*

WITH IMPERIAL YOU ARE

Sure!

● In printing, variable factors are the cause of many difficulties. Imperial Type Metal *plus* Imperial Service eliminates, once and for all, one of the most costly, most troublesome of all of the variables in printing production.

With Imperial Metal *plus* Imperial Service you are always sure of metal uniformity. You develop no gray hairs over metal difficulties. You waste no time tinkering and adjusting. And you free yourself at once from the extra costs of imperfect casts, machine shutdowns and other production losses for which metal deterioration can be responsible.

The Imperial Type Metal Man is a specialist in metal problems. Without obligation he will study your work and recommend the particular Imperial Service that will prove most advantageous for you. At your request we'll gladly put you in touch with him.

Imperial

TYPE METAL COMPANY

SERVING THE GRAPHIC ARTS *Exclusively*

PHILADELPHIA 34 • NEW YORK 7 • CHICAGO 50

Lift-Truck Bulletin

IN THE Bulletin 4883, recently released by Barrett-Cravens Co., is described and illustrated that company's line of lift-trucks. Reproduced by letterpress in two colors, the 28 page bulletin contains design drawings and specifications of lift-trucks in capacities from 1000 lbs. to 15000 lbs.

Selecting the Proper Model is the title of a chapter to aid in the selection of the proper lift-truck. Of help also is the inquiry sheet included in the bulletin.

In the close-up views are illustrated the mechanical features of Barrett single stroke hand lift-trucks. These include a rear axle construction which provides an oilless bearing the width of the truck and a spring handle hold-up which prevents the handle from falling to the floor when not in use.

Executive Ts

(Continued from Page 51)

of *Rollers, Their Advancement and Care*, which was followed by a question period.

On March 31st, William A. (Bill) Volkert, Chief Composing Room Machinist on the Buffalo (N.Y.) *Evening News*, retired after nearly 45 years association with that newspaper. Mr. Volkert first began work in the composing room at the old Buffalo *Courier*. He later went to the *Mercantile Review*, which later became the Buffalo *Morning Review*, and in the early 1900's he joined the composing room staff at the *Catholic Union & Times*. Three years later he became Chief Composing Room Machinist at the *Evening*

News. Mr. Volkert enjoys reminiscing his early days at the *News* when his department consisted of 10 Linotypes with gas-heated metal pots. Also recalled is the Buffalo *Sunday News* which was discontinued in 1915. He says that though the magazine section did contain pictures, the "days of real slick paper and rotogravure" had not arrived, so the Sunday paper was a matter of news with some ads.

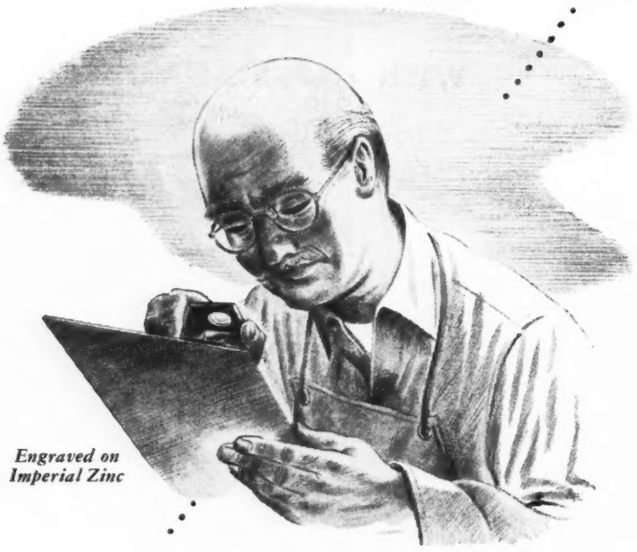
DeWitt G. Manley has been appointed Sales Manager of the Printing Machinery Div., Electric Boat Co., according to a recent announcement by Harold W. Gegenheimer, Manager of the Division. Manley's career in the Graphic Arts has varied from work as a newspaper photographer to manager of a combined offset-letterpress plant. He has spent the last

DeWitt G. Manley, new Sales Manager, Printing Machinery Div., Electric Boat Co.

four and a half years with ATF, first as Assistant Manager and later as Manager of Offset Sales. He served with the U. S. Army Infantry during World War II. In his new capacity, he will direct the sale of Electric Boat's offset presses through its sales offices in New York, Chicago and San Francisco.

At a recent meeting of the Board of Directors of the C. M. Kemp Mfg. Co.,

connoisseur of Quality



Engraved on Imperial Zinc

● Under the glass of the skilled engraver there are no hidden secrets in a sheet of zinc. On the contrary, here is where the fine, uniform grain of Imperial Zinc shows up to best advantage.

Users of Imperial Zinc know that Imperial always prints up well, takes powdering with only normal care to prevent shoulders and undercutting, stands up even under multiple bites where extra depth is called for.

Try Imperial for yourself. Order a case today. You'll agree there *is* a difference.

Imperial Zinc

A Product of

IMPERIAL TYPE METAL COMPANY

SERVING THE GRAPHIC ARTS *Exclusively*

PHILADELPHIA 34 • NEW YORK 7 • CHICAGO 50

Planning

New Printing Plant . . .

So You Can Work Intelligently With Architect-Engineer

● A 16 page booklet reprinted from the December issue of *Printing Equipment Engineer* especially for the executive who is building a plant or revamping his present facilities. Featured are two color plant diagrams, fundamentals of plant layout, use of templates in making scale plant layouts, value of rolling tables, selecting the site, locating equipment, working space between equipment items, color, light, ventilation—to mention but few of the highlights incorporated in this article.

$1 per Copy
Cash with Order

PRINTING EQUIPMENT
Engineer
1276 West Third Street **Cleveland 13, Ohio**

BEVERIDGE *Says:*

"Let's Check your Mat Costs Together" . . .

If you think your stereotype mat costs are running too high, we offer this suggestion. Write to us and let us check your mat costs with you. We want to show you how . . . by switching to BEVERIDGE DRY MATS . . . you get lower mat costs. It costs little to investigate . . . and can save you a great deal. . . . Write today.

New Products Division
The Beveridge Paper Company
Indianapolis 4, Indiana

Find The Pressman Who DOESN'T Use

VULCAN
Offset Blankets

There are plenty of sound reasons why VULCAN Newspaper Press Blankets are the preferred cylinder packing with a majority of pressmen who print the world's leading newspapers.

VULCAN Press Blankets have greater firmness, the correct degree of compressibility, increased resistance to wear and abrasion. These finer blankets are noted also for their precise uniformity of thickness. There is no ghosting, no bolstering, better second impression. You will enjoy the advantage of longer press runs with a minimum of effort.

There is a combination of VULCAN cylinder packing for every type of press, old or new, and every operating condition. Let us give you YOUR combination for a better-looking paper.

Vulcan
PROOFING COMPANY
FIRST AVENUE & 58th STREET • BROOKLYN 20, NEW YORK

Pacific Coast Representative: THE CALIFORNIA INK COMPANY, INC.
Canadian Representative: SEARS LIMITED, TORONTO

J. Clarence Kimpel was elected President and Chairman of the Board, succeeding the late Wallace W. Kemp. Edward J. Funk, Jr. was elected Vice President and will continue in his present capacity of Chief Engineer. Elected Secretary and Treasurer was Charles E. Wilbur. Wilfred G. Keir was added to the Board of Directors.

Louis E. Pleninger, Vice President in Charge of Export Sales, ATF Sales Corp., is in Europe for a four-months tour of Graphic Arts centers. His trip will include England, the Netherlands, France, Germany, Switzerland, Italy, Norway, Sweden, Denmark, Turkey, Egypt, India and Pakistan. In England, Pleninger will confer with officials of Vickers-Armstrongs, Ltd., which is now manufacturing ATF's Little Giant automatic cylinder presses and the ATF CE-Kelly presses. In Sweden he will visit the plant of AB Printing Equipment, which is manufacturing the ATF Chief offset presses.

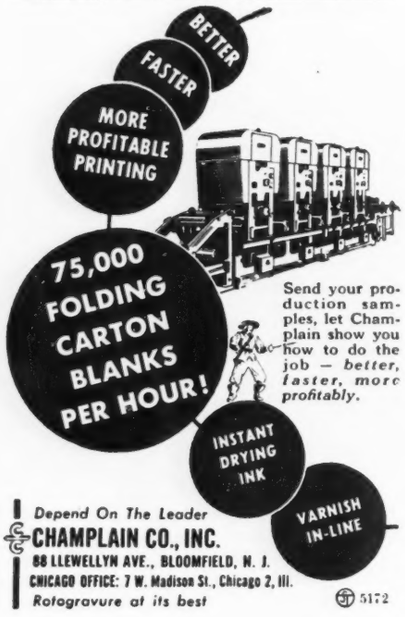
Appointment of Joseph W. Peacock as factory representative in Texas and Sigurd Swensen as factory representative in the Pacific Northwest for Nolan Corporation, was announced recently by Jerry Moss, Sales Manager. Peacock has operated his own print shop, published a country weekly newspaper, and conducted a business in printing equipment and supplies. Swenson has been engaged as a machinery salesman for several years and recently operated his own printing equipment business in Seattle, Wash.

Sigurd Swenson, Pacific Northwest representative for Nolan Corp.

Representing Nolan Corp. in Texas is Joseph W. Peacock.

According to a recent announcement by E. B. Davis, Vice President of Ideal Roller & Mfg. Co., Jerry Gleason has been added to that company's Long Island City, N. Y., sales force. Prior to joining Ideal, Gleason worked in the sales departments of machinery and roller concerns. He served for five years in the U. S. Army and saw service in the European Theatre of Operations. He is a member of the New York Club of Printing House Craftsmen and the Printing Supply Salesmen's Club of New York.

S. W. Corbin has been appointed Assistant Manager of the Industrial Divisions of General Electric's Apparatus Dept., according to a recent announcement by K. H. Runkle, Divisions Manager. Corbin also is Manager of the Resale Industries Div., a position he assumed in 1943 and will retain along with his new appointment. He served as sales manager of the Machinery Manufacturers Section of the Industrial Dept. from 1937 to 1943. A graduate of Union College in 1930, Corbin came to G. E. as a student engineer the same year.


BETTER
FASTER
MORE PROFITABLE PRINTING
75,000 FOLDING CARTON BLANKS PER HOUR!
Send your production samples, let Champlain show you how to do the job — better, faster, more profitably.
INSTANT DRYING INK
VARNISH IN-LINE
Depend On The Leader
CHAMPLAIN CO., INC.
88 LLEWELLYN AVE., BLOOMFIELD, N. J.
CHICAGO OFFICE: 7 W. Madison St., Chicago 2, Ill.
Rotogravure at its best
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FOR IMMEDIATE SALE

8—Linotypes Model 8; Serial Number over 39,000
1—Linotype Model 25
1—Intertype Model C
1—Intertype Model D—72 Channel 42 Ems
1—Intertype Model X
1—Monotype Caster
100—Intertype Magazines (Used)
25—Linotype Magazines (New)
20—Split Magazines—72 Channel
1—Vandercook Proof Press No. 17
Nolan Proof Presses in all sizes
9—Saws: Miller-Bench and Pedestal Nolan; Superspeed; C. & G.
Galley Cabinets and Galleys
Operators Copy Stands
Matrix Storage Cabinets (Steel)
Reid Racks: Linotype and Intertype
Gas and Electric Pots: Linotype and Intertype

HIGHEST PRICES PAID FOR YOUR TRADE-IN EQUIPMENT

LINOTYPE SUPPLY CO., Inc.
(Est. 1914)
337 Canal Street New York 13, N.Y.
CAnal 6-0916

By all tests

The Best Zink Cut Cement...

No other cement approaches BOOTH'S ZINK CUT CEMENT as a means of quickly mounting cuts and holding them fast. Prove this to your satisfaction.

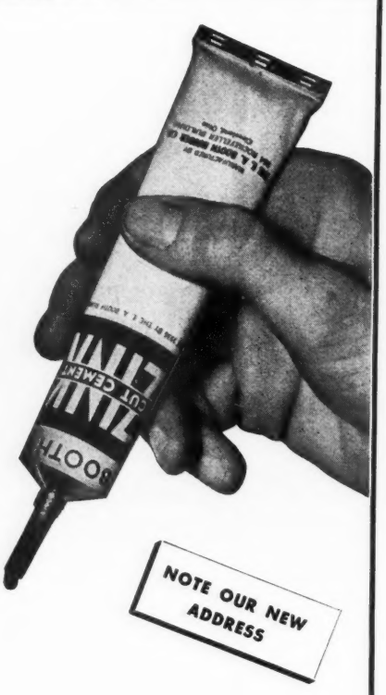
PRICES: In the United States 75c per tube, $6. a dozen tubes

Use *Booth's* Rubber Rolls

FOR LINE COMPOSING MACHINE KEY BOARDS

Until you do, you will never know how smooth and highly responsive to key board cam action a good rubber roll can be. They have maximum cam gripping qualities and resistance to glaze. They are of even diameter when applied properly to the roll shaft.

PRICES: $1.45 per pair 7.75 per dozen



NOTE OUR NEW ADDRESS

E. A. BOOTH RUBBER CO.
2855 SCARBORO ROAD
CLEVELAND HEIGHTS, OHIO

Style KP has Power Inker
Style KA has Automatic Inker

IT'S A CHALLENGE®

It's the new Series K. And that's another way of saying ***clean, sharp, uniform proofs every time.***

The new Challenge Series K Proof Presses are all cylinder press design with the cylinder revolving while the reciprocating bed rides on anti-friction rollers. All three models are equipped with cylinder grippers and micrometer side guides, a foot trip to prevent offset on the cylinder packing during the return stroke, and a sliding feed board to give easy access to the cylinder packing. Two sizes in each style.

Get complete details today!

Style KE has 20" Ink Distributor

Style K has Ink Plate

613

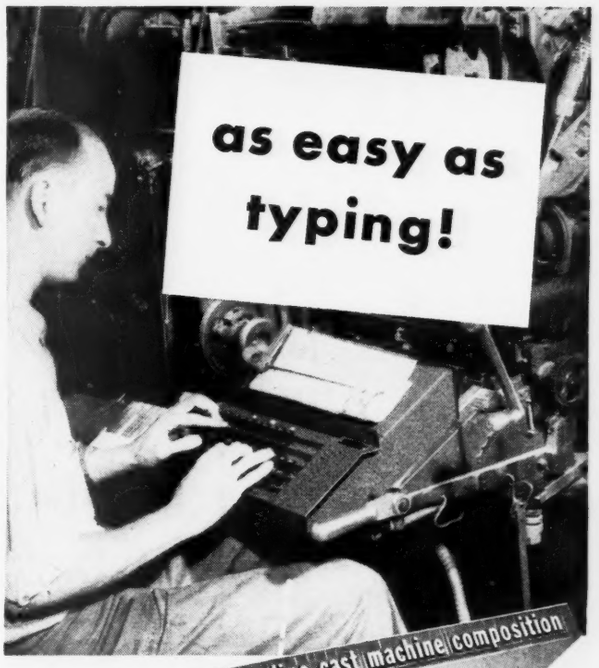
THE CHALLENGE MACHINERY COMPANY

GRAND HAVEN, MICHIGAN

Challenge Reg. U. S. Pat. Off.

Over 50 Years in Service of the Graphic Arts

DEALERS IN ALL PRINCIPAL CITIES



"TYPEWRITE" your line-cast machine composition

With the **KELLOGG**

Type-O-Writer KEYBOARD*

(Reg. U. S. Pat. Off.)

The Kellogg Type-O-Writer makes line-cast machine composition practically identical with typewriting and just as easy. Users say it's the most significant composing room development in many years!

Its standard typewriter key arrangement gives the operator full use of both hands across the entire keyboard. No left-hand load—one of the principal causes of errors and fatigue. Reduces the number of keys from 90 to just 44. With work distributed evenly between both hands and just half as many keys to use, operators turn out better work, with fewer errors, at lower composition costs. . . . For early delivery, order now. Write for new Bulletin and literature.

OK w.c. EB

HOW *Type-O-Writer* WORKS

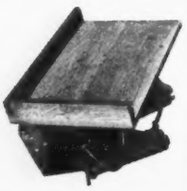
Locates directly over the composing machine keyboard. Through solenoid operated plungers, a single Type-O-Writer Key operates lower case, cap and small cap keys on the composing machine. Shifts like a typewriter. Fits Linotype and Intertype machines. Installs with a screw driver.

KELLOGG SWITCHBOARD AND SUPPLY COMPANY

Type-O-Writer

4650 SOUTH CICERO AVENUE • CHICAGO

SYNTRON
VIBRATING
PAPER
JOGGERS
Save Time and do a better job!



3 TYPES
Single action, double action, and automatic.

11 STYLES
5 table models, 6 portable floor models.

Write for Descriptive Folder

SYNTRON CO.
577 Lexington, Homer City, Pa.

BETTER
FASTER
MORE PROFITABLE PRINTING
18,000 MULTICOLOR SHEETS PER HOUR!
Send your production samples, let Champlain show you how to do the job — better, faster, more profitably.
EASY TO OPERATE
NO MAKEREADY

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CHAMPLAIN CO., INC.
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Rotogravure at its best
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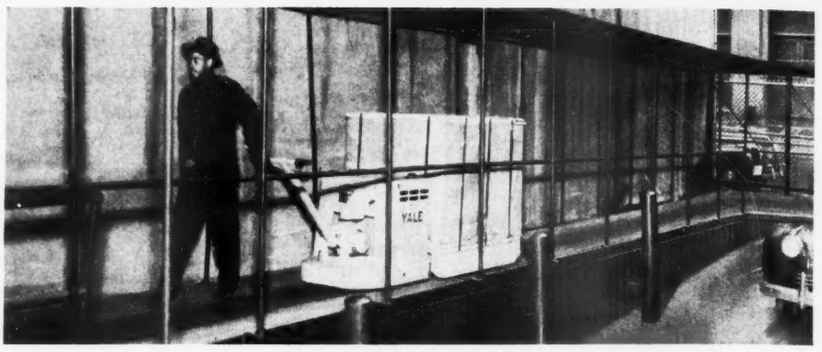


Ramp at National Publishing Co., Philadelphia, which cuts handling costs 25 per cent with the aid of motorized hand truck.

Transfer Costs Cut 25 Per Cent

BY constructing two ramps and utilizing a motorized hand truck which climbs the ramps under its own power, the National Publishing Co., Philadelphia, has reduced by 25 per cent the cost of transporting 60 to 80 skids per day between its warehouse and plant buildings. Richard Squires, National Publishing Co. engineer, and designer of the system, points out that in addition to reducing annual costs, the system has resulted in an improvement in the flexibility of the handling operation.

The warehouse and plant are located on opposite sides of a city street. Formerly, skids were loaded onto a street truck at the warehouse and driven across the street to the plant where they were unloaded onto the receiving dock and taken inside.

Under the new system, ramps have been built at the warehouse and plant, and platform-type skids adopted. The ramp shown in the illustration is at the plant and has a nine per cent grade with a rise of 46 in.

Photoengravers Research Receives Appropriation

Photoengravers Research, Inc., has appropriated $20 thousand for organized research this year on problems of the photo-engraving industry. The effort will include studies on a commercial scale of the electrolytic etching of copper and continued investigations of periodic reverse-current etching. Considerable attention will also be given to the etching of zinc and magnesium for photoengraving and to the study of tonal retention during the production of engravings.

The year's program was outlined at the February meeting of the Board of Directors of Photoengravers Research held in Columbus, O. The Board voted to renew its contract with Battelle Institute to conduct its research. October 24, 1949 was set as the date for the Fourth Annual Meeting of the membership in New York City. Authorization was also given for the printing of 2500 copies of the book *The Ferric Chloride Etching of Copper for Photoengraving*.

Present at the Directors' meeting were: Gene C. Meston, Capital City Printing Plate Co.; Ralph Yeomans, Bridgen, Ltd.; Phillip Ahrenhold, Conde' Nast Engraving Co.; George F. Hoffman, Dixie Engraving Co.; H. R. Anderson, Advertisers Engraving Co.; E. Bartlett Brooks, Wayne Colorplate Co. of Ohio; Charles Wilhelm, Lincoln Photoengraving Co.; and J. Homer Winkler, Battelle Memorial Institute.

HYDRAULIC ELEVATING TURTLE
by NOLAN

This new turtle is equipped with hydraulic mechanism for raising and lowering top. Top has 5" vertical travel. Foot pedal provides smooth, even fluid action for raising and lowering table top. There are positive limit stops with a special high-low device giving ¼" differential for sliding formt on or off easily.

It is ruggedly built to give years of service

Write for Bulletin

NOLAN CORPORATION
1331 East Dominick St.
ROME, NEW YORK

Builders of BETTER Equipment for BETTER Printing

HOW TO ADJUST
WORK-UPS

By Wm. H. Lichter and Geo. F. Smalley

This 24-page booklet analyzes causes of work-ups and gives proper procedure for locking up forms.

PRICE $1.00 CASH WITH ORDER

PRINTING EQUIPMENT *Engineer*
1276 West Third Street, Cleveland 13, Ohio

Non-Carbon Black Ink

By DONALD A. ROBBINS*

**East Stroudsburg, Pa.*

PRESSURE for better newspaper and magazine inks is constant and from two directions. First of these pressures is the direct result of increasing newspaper and magazine press speeds, requiring a fast-drying ink. The pressure from the other direction for a better ink product comes from advertisers who are insisting on better reproduction results.

Probably the biggest question that has always faced our ink makers and their research staffs is whether to first meet the demands of speed or of production quality. Obviously, one or the other had to be sacrificed. Research simply could not keep step to solve both problems simultaneously.

The writer has invented an ink which comes close to solving both the problem of speed and quality of reproduction.

The new ink is rub-proof and will not soil readers' hands, nor will it dirty their clothing. It replaces dull print with a print having some gloss.

This ink has been tested on flatbed magazine presses as well as on newspaper rotary presses. Production speeds on the latter have been up to 45,000 newspapers per hour.

Various tests with the ink have been conducted over a period of one year at the Grit Publishing Co., Williamsport, Pa. The results there have been superior to those achieved with present-day news inks.

Aside from being more densely black, the ink has additional advantages. Important visual advantages are improved appearance of news and advertising pages brought about by the glossy finish, increased color, and clean unstained printing, all of which were hitherto thought impossible of attainment with present newspaper press equipment.

High speeds of newspaper and magazine presses necessitate a fast drying ink. To help ink set quickly, one means or another is resorted to.

Ink absorption on web-fed presses can be satisfactory only when the oil and basic color are drawn quickly into the printing papers. Such absorption of ink will contribute to the drying. If it sets rapidly, smear, offset, and many production headaches are reduced or eliminated.

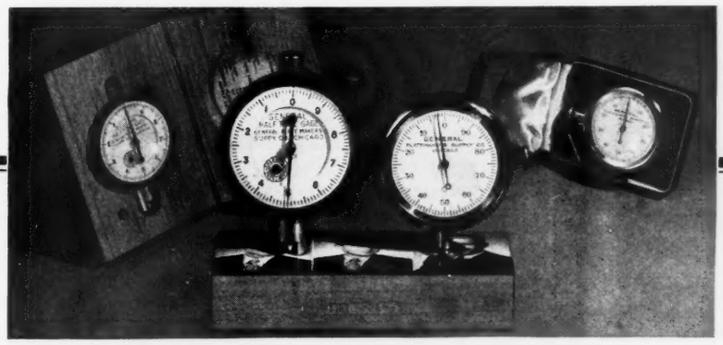
The new non-carbon black ink, called Darco Plastix, is swiftly absorbed into newsprint and other papers of similar absorptive qualities, and sets promptly. A plasticizing process starts as soon as the ink is transferred from the plate to the web. This plasticizing causes the ink to harden fast, and provides what may be termed a protective cover against offset or smear.

Idleness of a press for several days will not harden the ink, or clog the ink distribution system.

The results of various tests at the Williamsport *Grit* makes it possible to make some rather definite claims for this ink, as follows:

The amount of "color" usually carried can be increased for complete coverage without smearing, or filling of type; it does not leave surplus ink accumulation on the plate. Considerable reduction of strike-through, ink misting, and first impression offset is effected. The ink will not stain and leaves the newsprint as white as the original stock color. It is non-abrasive, will not separate, and does not cause harm to any type of printing press roller. No attachments or changes to present pressroom equipment are necessary.

The ink may be manufactured with presently available ink-making equipment. Some of the ingredients used are of a type found in higher quality inks. The added cost of these ingredients is of course reflected in the cost per pound of



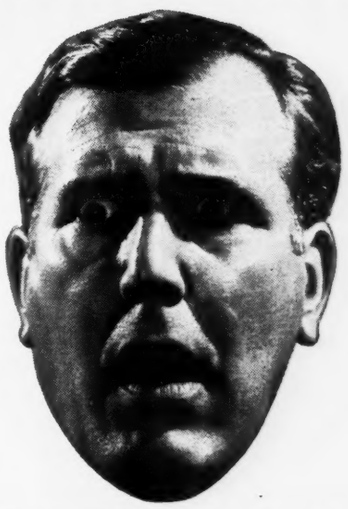
ELIMINATE GUESSWORK!

THE GENERAL HALFTONE GAGE is accurate and foolproof. Dial measures only 10/1000 in circumference. You can actually measure 1/10,000 variation in depth because each 1/1000 is graduated into 1/10,000. Indicator moves a full ½ inch for each 1/1000 which insures very accurate readings. Inner dial shows depth measurements up to 65/1000. Needles are easily removable and adjusted. Fine wood case has printed standard depth chart and slot for extra needle.

As shown at left	$56.00
Case	3.00
Extra Needle	1.00
General Standard Depthometer 0-90 1000	
As shown on right	$23.50
Case	3.00
Extra Needle	1.75

General Plate Makers Supply Co. • 522 SOUTH CLINTON STREET CHICAGO 7 • ILLINOIS

Brawny ELECTRIC TRUCK *AMAZES* MANAGEMENT



Cuts Handling Costs *IN HALF!*

Works All Day for 11¢*

Imagine, if you can, a brawny electric truck that moves and lifts 6000 pounds of your product so simply and easily, even your stenographer could operate it all day, and never become the *slightest bit fatigued!*

That miracle truck is Automatic Transporter. It moves and lifts *any and every* kind of product with amazing touch-of-thumb ease. All operator does is *press the button. Transporter does the rest!* One man handles more material than three men *manually* . . . enjoys doing it!

No wonder Transporter astounded management with its new, low-cost way to cut handling costs thousands of dollars. And it does it for as little as *11c-a-day battery charging cost,* maintenance and replacement no item at all. Industry-tested and proved, thousands and thousands are in daily operation. Mail coupon for FREE CATALOG of money-saving facts.

MAIL COUPON TODAY!

AUTOMATIC TRANSPORTATION CO.
DIV. OF THE YALE & TOWNE MFG. CO.
155 W. 87th Street, Dept. D-1
Chicago 20, Ill.
Send free catalog showing Transporter new, low-cost way to cut handling costs in half.

Name.....

Address.....

the new ink. However, a price of from 6c to 10c per lb. over present news ink prices is as reasonable an estimate as may be given at this time.

Research for further improvement of the ink is going forward. Testing of further research will be made with the continued cooperation of the American Newspaper Publishers' Association Mechanical Research Department, and the Williamsport *Grit*.

Time's Research Progress

In their annual report to stockholders of Time, Inc., Roy E. Larsen, President, and Maurice T. Moore, Chairman of the Board, discuss Time's Research and Development Program. They state that new developments in paper making, printing and other phases of the art have been slow in coming.

Time, Inc., because of its great stake in the Graphic Arts, has not only stepped up its own research and development work, but has sought the cooperation of its suppliers and others in the field. The results to be achieved are tangible, in new or improved machines, and intangible in making people more alert to the necessity of change and progress.

"The paper coating machines which we developed in cooperation with St. Regis Paper Co.," said Messrs. Larsen and Moore in citing an example of notable progress in 1948, "are producing paper of excellent quality. More important, they are furnishing the basic design for the engineering and construction of one of the largest 'on the machine' paper coating installations being made anywhere for the production of magazine paper," which installation is expected to be in operation around the middle of 1949.

"There are several additional developments which have been brought through the pilot plant stage of development this past year, and we are pushing hard to get them into practical operation in the production of our magazines in the course of this year. We are encouraged, therefore, to believe that significant, if not revolutionary, developments in our production methods can be achieved in the course of the next few years."

Bingham Expansion

Expansion of manufacturing and shipping facilities of Sam'l Bingham Son Mfg. Co., Chicago, was announced by President Carl G. Bingham at the company's annual sales conference held in the Palmer House, Chicago, on February 20, 21 and 22, at which were present 54 of its executives and salesmen from 16 branches. He also announced that in 1948 the company enjoyed the greatest increase in volume, and widest distribution of its product of any of the years throughout its 102 year history.

The addition now being erected adjoins the present building and will consist of two stories and basement, 102 ft. by 40 ft.

A birthday cake made a sudden appearance on February 20 in honor of Mr. Bingham's birthday. Later during the conference, C. F. Peterson, who has been in the employ of the company for 50 continuous years, was presented with a watch and a substantial government bond by Mr. Bingham, with wishes for many more years of health and happiness.

BETTER
FASTER
MORE PROFITABLE PRINTING
18,000 MULTICOLOR SHEETS PER HOUR!
Send your production samples, let Champlain show you how to do the job — better, faster, more profitably.
NO PRESS WASHUP
ROLL PAPER 7-12% CHEAPER
Depend On The Leader
CHAMPLAIN CO., INC.
88 LLEWELLYN AVE., BLOOMFIELD, N. J.
CHICAGO OFFICE: 7 W. Madison St., Chicago 2, Ill.
Rotogravure at its best
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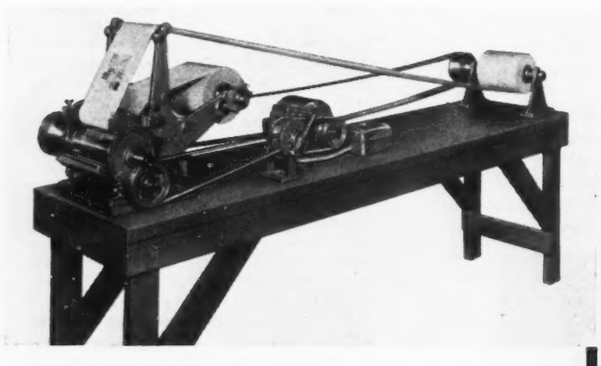


ROTOGRAVURE LABORATORY PRESS

Ideal for testing gravure inks or paper in the laboratory

A web up to 8" wide can be printed from standard 3" diameter paper core. The press is sold complete with motor, variable speed drive with speeds up to 150 ft. per minute and rewinder . . . all mounted on either a steel or wooden table . . . ready for operation.

STANDARD PROCESS CORPORATION

Manufacturing Gravure Equipment & Supplies

2704 Roscoe Street • Chicago 18, Ill.

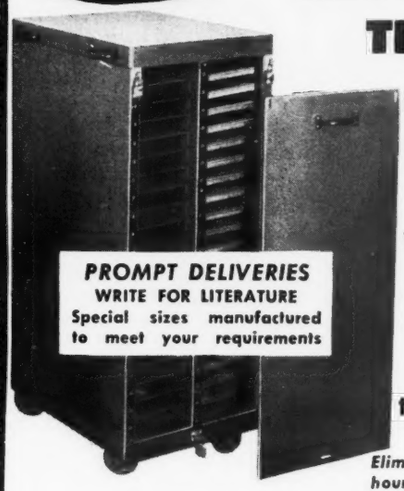
GALLEYS AND CABINETS - ALL SIZES

STEEL IMPOSING STONES · PROOF PRESSES · SAW TRIMMERS

SAFETY CHASES · ROUTERS · NUMBERING MACHINES · PAPER DRILLS

foster

GALLEY TRANSFER TRUCK



Designed to handle the heaviest possible weight load of galleys for local and long distance transportation

PROMPT DELIVERIES
WRITE FOR LITERATURE
Special sizes manufactured to meet your requirements

Eliminates countless hours of wrapping and boxing page forms

FEATURES

- Heavy Ball Bearing Wheels for ease of movement.
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FOSTER MANUFACTURING CORP.

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Known Nationally For Dependability & Permanence

TYPE METAL REMELTING FURNACES

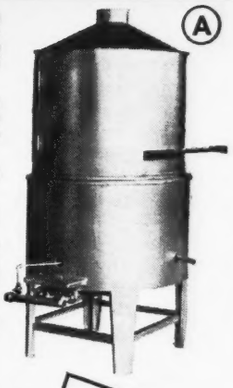
(A) 'Surface' Type Metal Remelting Furnace equipped with Atmospheric Burner and hood. Available in capacities up to 2500 pounds of metal.

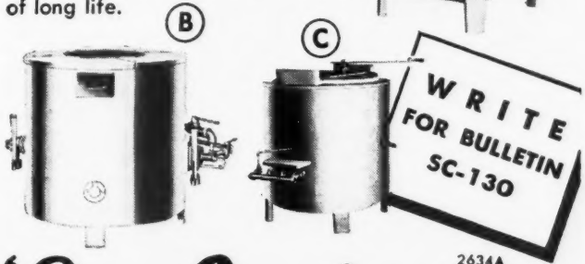
(B) 'Surface' Type Metal Remelting Furnace equipped with Pressure Burner. Available in capacities up to 3200 pounds of metal.

(C) Furnace equipped with atmospheric burner and bottom outlet.

(All types can be equipped with hood)

'Surface' Gas-Fired Furnaces for type metal remelting are designed to provide the industry with an efficient, rapid remelting furnace of long life.





WRITE FOR BULLETIN SC-130

2634A

'Surface' *Standard Rated* FURNACES

SURFACE COMBUSTION CORPORATION, TOLEDO 1, OHIO

"PERSONNEL TROUBLES? WE DON'T HAVE 'EM"

Foreman John tells a conference questioner that the newest member of his crew has been with him seven years—that he has a list of good stereotypers who want "first chance."

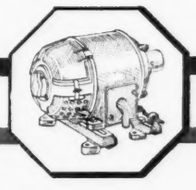
"I don't like to brag," he adds, "but we have a name for running steady, day after day, on schedule without the jams that wear a man out. That's why men like to work in our plant." He didn't mention Certified Mats, but many of his hearers knew.

For dependable stereotyping, rely on Certified Mats **Certified** DRY MATS

CERTIFIED DRY MAT CORPORATION, 9 Rockefeller Plaza, Dept. M, New York 20, N. Y.

KIMBLE

CUSTOM-BUILT MOTORS



STANDARD OF PERFECTION IN THE GRAPHIC ARTS INDUSTRY FOR NEARLY A HALF CENTURY

KIMBLE ELECTRIC

Division of Miehle Printing Press & Mfg. Co.

2853 MT. PLEASANT STREET

BURLINGTON, IOWA

DISTRIBUTED BY AMERICAN TYPE FOUNDERS

HAVE YOU HEARD?

● **The word is traveling fast that *New England's* New "Regal" Monocork is just about the finest press packing available.**

Do you have trouble with blankets "crawling" or "creeping"? TRY "REGAL!"

●

NEW ENGLAND NEWSPAPER SUPPLY CO.

164 FREMONT STREET

WORCESTER, MASSACHUSETTS

BRANCHES: NEW YORK, CHICAGO, SAN FRANCISCO, TULSA

Typography for Tomorrow

(Notes of an address delivered by Paul A. Bennett, Director of Typographic Layout, Mergenthaler Linotype Co., before the Cleveland Club of Printing House Craftsmen, March 1949.)

BEFORE we consider *Typography for Tomorrow*, the present types which are now in use must be analyzed. Keynote of the thoughts expressed by Paul A. Bennett was the reason for the design and the cutting of new type faces when such a great number are already in use. Each of the types has a different and distinct job to accomplish. It is just as honorable, just as important, and takes just as much intelligence to plan and choose the types for a food advertisement as it does to design and set the type faces for some expensive and elaborate book.

The reason for cutting new faces with already a great number of them in circulation is because it is someone's judgment the new face will do a particular job. Or it may be designed because it is opined that it will do one specific job better. He asserted it is sheerest nonsense for anyone to claim that hand-cut types are superior to the present day machine-cut types. The reason is that type and matrix manufacturers have very fine equipment with which to reproduce duplicate characters and to provide consistency and similarity in letter characters. It is an impossibility for anyone to duplicate hand-cut punches exactly.

Mr. Bennett held up advertising typography as the best example of the character of printing done in America today. Machine typography, asserted the speaker, is much better than that which is set by hand. He stated the best American typography is a distillation of British, French and German styles. Our best types are those which we have inherited from our English ancestors who arrived in this country on the Mayflower.

The basic types such as have been given specific names by his company's versions are Metrolite, Memphis Medium, Bodoni, Caslon Old Face, Janson, Granjon, Baskerville, Caledonia, Electra and Fairchild. Of these, Metrolite is a basic skeleton form. The design progresses from Metrolite to more grace and sharpness as in Memphis Medium which has the addition of the square serif. A great distinction between thick and thin strokes is shown in Bodoni, while Caslon has contrast. Mr. Bennett described Janson as a high development in types, attributing its source to the Dutch. Baskerville is a transitional face and shows the distinction between Old Style and Modern types. Variety, freedom and grace are noticeable in certain letters in Fairfield.

Present types were designed and are made to be printed from, he asserted—not to be photographed and pasted up. When reduced in size photographically from a 12 pt. size, for instance, fine hair lines are lost and the distinction between thick and thin strokes is distorted. Caslon was used as an example. The speaker doesn't doubt but what types will be designed in the future for reproduction by photographic means.

Script types, continued Mr. Bennett, are especially poor for use in composing machine production. At one time, principally Roman faces in one-letter matrix form were made for composing machine matrices. This condition prevailed until printers began to insist that an italic or bold face character added to the one-letter matrix and in combination with it upon the same matrix. This presented a problem to the matrix manufacturer. It meant that the design of the italic or bold face letter characters would have to be distorted to fit them into the arbitrary set-widths of the roman position characters already punched in the matrix in one-letter forms. In fitting the bold face round-bodied characters it is necessary to thicken the character inside the bowl of the letter. In the case of italic ascenders or descenders, it is necessary to change the stroke angle.

The reason some types are darker in the mass than others is due to the difference in the stems and hairlines or what he termed as the weight of the face. Caslon Old Style was cited as an example, which has stems of 0.015 in. thickness and hairlines of 0.003 in. thickness. This

"Your Goldmine for Forty-nine"

Baumfolders

14x20 Five-Fold Automatic Baumfolder
$85 initial and $1 a day for 30 months

17½x22½ Six-fold Automatic Baumfolder
$150 initial and $1.40 a day for 30 months

22x28 and 25x38 Automatic Baumfolders
Proportionately painless in outgo, but boy OH BOY . . . an income for a life-time of golden profit.

If kept busy but two or three days a month it will pay for itself several times over, before you pay for it.

The next move is yours . . . write, wire or phone collect (from anywhere) . . . Lombard 3—8164-5-6.

RUSSELL ERNEST BAUM, Inc.
615 CHESTNUT STREET, PHILADELPHIA 6, PA.

35
YEARS EXPERIENCE

New Plants

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Surveys and Reports

Material Handling

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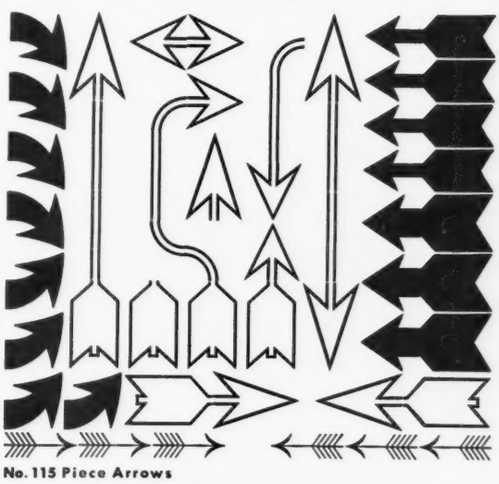
L. A. Type has a selection of over 175 of these handy fonts. Priced at $1.75 they consist of fractions, stars, border pieces, emblems, and ornaments—a real time saver in the composing room. *Write for our new Hand-i-Font catalog.*



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Costly one-of-a-kind equipment, built by Wood to meet exacting dry mat production standards, is one of the reasons why Wood Dry Mats are "tops" in the field.

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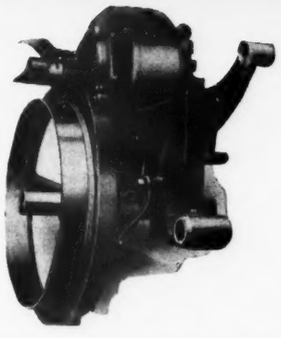
THIRTY MINUTES



That's all it takes to equip your Linotype or Intertype with this Ultra Dependable power plant, the . . .

CUSHMAN *Offset* MOTOR

Standard in the trade, the Cushman is the original and oldest type-setting machine motor.

Write for booklet

PRECISION TRADE ★ MARK

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Factory and Main Office
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Branch Office 1327 BROADWAY KANSAS CITY 6, MO.
CHICAGO • MINNEAPOLIS • DENVER • NEW YORK • BOSTON

ECONOMY LIFTERS

As used in the printing industry for:

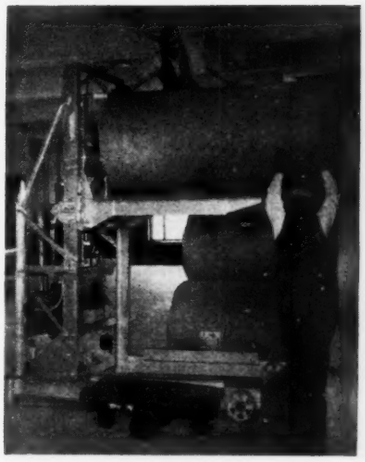
ROLL HANDLING
(any size or weight)

SKID HANDLING

BOXES, FLAT PAPER

BALES, WASTE PAPER

CARTONS



"Handling News Print Rolls"

Other lifters available with capacities of 500 to 5000 pounds. Any platform lift and size. Hand and electric powered hoist units.

ECONOMY ENGINEERING CO.

4501 W. Lake Ave. . . . Chicago 24, Illinois

means that the stems are nearly five times the weight of the hair lines.

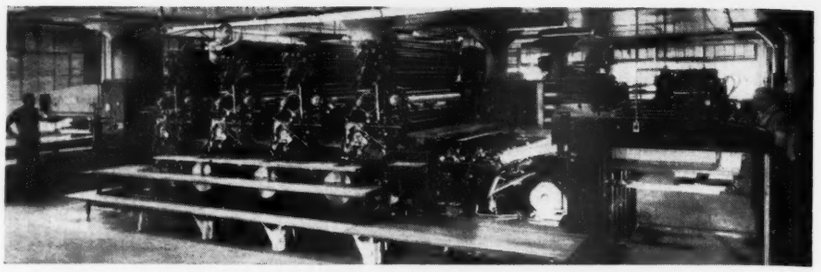
A certain amount of white space on each side of a letter also helps to determine the effect a type will have upon the eye when it is in the mass. In some instances, the weight is added on either the inside or outside of the letter to narrow the white space visually around that character.

The eye is the final arbiter as to whether or not a type face is well fitted. The reason some people like the combination of old style with modern faces while others don't, is attributed to individual tastes with respect to type harmony. In magazine, newspaper and book printing, some persons desire a light appearing reading column, while others want it dark and still others prefer a happy medium between the two.

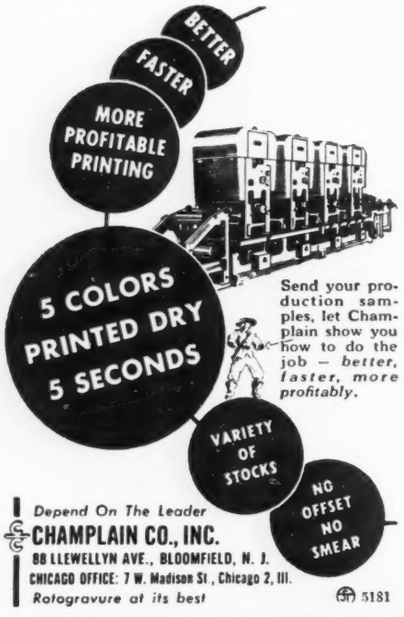
When studying various popular faces, it is best to look at the characters which have been printed especially for the purpose in large point sizes (60 pt. or 48 pt.) arranged in single line form. Variations in certain letters (such as the curli-cues on the lower case "g" and the tail dots on the lower case "y") can readily be seen in this manner. It will also be noted that some like letter characters of different faces are widened or opened up. The smaller characteristics like those just mentioned comprise the chief differences in type faces.

Mr. Bennett explained that the sans serif types are favored for display work. But according to a recent personal study of magazine advertising typography, he said that 80 per cent of the types in use today were used 25 years ago. He asserted this is not a good condition and something should be done about it. Types are being cut today that will mix well when used in combination. He called Janson, Caledonia and Fairfield well fitted types.

All mechanical and production executives are invited by the editor to submit informally in a letter devices or methods devised in their plants so other executives may be helped.



Recent Harris-Seybold Installation—A Model 458 (42 in. by 58 in.) Four Color Offset Press was installed recently by Harris-Seybold Co. at the plant of Schwabacher-Frey Co., San Francisco. Shown at work on the new press are (left to right) Gerald Ball, Pressman, Ben Carson, Assistant Pressman, and Grant McKnight, Press Assistant. The Model 458 will deliver up to 6500 impressions per hour.


BETTER
FASTER
MORE PROFITABLE PRINTING
5 COLORS PRINTED DRY 5 SECONDS
Send your production samples, let Champlain show you how to do the job – better, faster, more profitably.
VARIETY OF STOCKS
NO OFFSET NO SMEAR
Depend On The Leader
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CHICAGO OFFICE: 7 W. Madison St., Chicago 2, Ill.
Rotogravure at its best
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REGISTERED U.S. PATENT OFFICE
RUBBER PLATE MACHINE

At last printers can make their own rubber printing plates for one-fifth the cost of buying electros or rubber plates from trade makers!
It is practical and profitable for nearly any print shop. Make your own rubber printing plates in a few minutes and take advantage of all the time-saving, cost cutting features. Anyone in the shop can operate it! DICO makes rubber stamps, too!

HUNDREDS OF SATISFIED USERS!

Write today, we will send you free illustrated folder about DICO, which shows both the hand operated and hydraulically operated models.

O. C. HANEY CO. 1206 Maple Ave. Los Angeles 15, Cal.

Uniform density . . . high color strength . . . exceptional coverage—feature Herrick Inks due to finest ingredients and exact control in manufacturing. Ask HERRICK to study your pressroom conditions and create a special formula ink, "tailor-made" to your requirements for letterpress or offset.

4053

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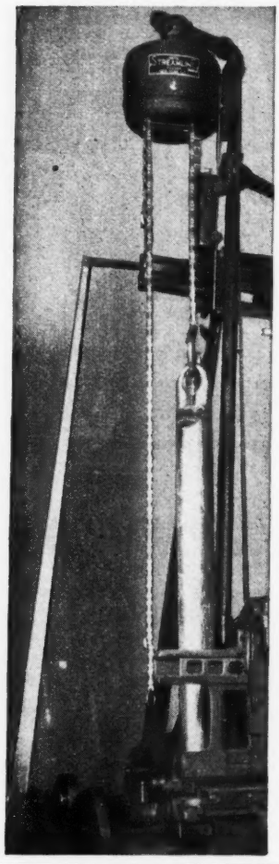

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Cylinder Covering Pressure Distribution

(Continued from Page 45)

ondly, all the blocks are mounted according to the Hacker system on metal bases with accurately measured underlays.

Summary

The differences in pressure which develop on different printing elements in a letterpress forme when printing in a cylinder press are not determined by the printing density of the elements, as Letouzey claims. They develop as a result of the difference between the area of the printing surface and the area of the zone in the cylinder covering compressed by the printing element. The relation between these areas depends on the elastic properties of the material in the cylinder covering, especially its elasticity and shear modulus.

When the values of these are given, it is the absolute size of the printing elements and their distance from each other, and not the relation of the area of the printing element to the area of shank, which decides the differences in the pressure on the printing elements at a given compression of the cylinder covering.

The height of the material in the forme must be as exactly alike as possible, excepting printing elements with a very large printing surface, such as blocks. It is impossible to obtain an evenly distributed pressure in the forme without make-ready of the blocks. The thickness of the make-ready must have a certain relation to the hardness of the cylinder covering.

The elastic properties of the cylinder covering are of great importance for an even distribution of pressure. It is therefore desirable that new materials be tested for the purpose of obtaining a more ideal type of cylinder covering than the one now in use. The material of the cylinder covering must have an elasticity modulus which is as high as possible with regard to the unavoidable variations in height in the typographical material. At a given modulus of elasticity, the material should, furthermore, have as high a shear modulus and contraction modulus as possible.

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[1] G. E. Carlsson, Grafiska Forskningslaboratoriets Meddelande, no. 13, p. 19, (1947).

[2] W. G. W. Harrison a. J. A. S. Morrison, Patr. Bull. no. 5, (1946).

[3] V. Letouzey, Contribution to the study of the cylinder covering of printing machines, London, (1947).

[4] G. E. Carlsson, Grafiska Forskningslaboratoriets Meddelande, no. 3, p. 5, (1943).

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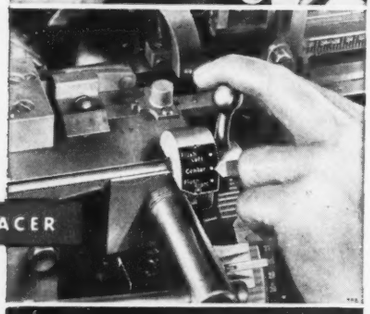

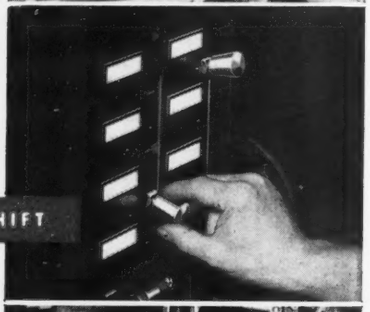

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